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Chapter 5 - OPERATING EXPENSES

This chapter discusses the broad array of expenses that are most commonly incurred by associations, and the ordinances that may affect the operation of a facility or regulate the services provided by a community association. General background information is given to assist in planning for normal operating and maintenance expenses and in establishing reserves for facility replacement or major maintenance costs. Many variables affect the cost of operating and maintaining the common facilities of a community association. The physical size and type of community, the type of common areas and facilities, and the number and age of residents using the common facilities determine the number of operating staff required. The quantity of supplies and equipment, frequency of service and replacement, the life span of the facilities also affects operating expenses, the hours of operation, and the utility costs. The season of year, daylight or nighttime use, indoor or outdoor location must also be considered in determining a budget and operating costs for an association's common facilities.

Contracting Procedures:

In its most basic meaning, a contract is an agreement between two parties. Typically, the agreement is for materials, a product, a service, or any combination of these in exchange for a specified lump sum price or fee schedule, or other compensation. Associations generally become involved in three types of contracts: 1) long- term service contracts for trash removal, lawn maintenance, and other repetitive needs; 2) management services contracts for maintenance, painting, snow plowing, and routine repairs; and 3) capital improvement construction contracts such as major road repair, a new clubhouse, or recreation facility. Every contract must include a defined scope of work, be competitively priced, and be properly performed to protect the association against losses. Problems for both contractor and the association arise from lack of information, misinformation, incompetence, non-performance, inferior workmanship, property damage, worker's compensation, or other claims. Adoption of a businesslike contracting procedure will help to avoid these problems and achieve satisfactory results. A contract procedure outlines the necessary steps, should specify a member or representative of the association who is responsible for each step, and includes a completion schedule to ensure that the materials, product or service is available when needed. When contracting, the following steps should be taken:

- Clearly define the scope of work and/or the services needed – If an association does not know precisely what the work entails, how is the contractor or provider to know? The directors can contact professional engineering, management, construction or other firms to discuss the association's needs or a specific problem; to define the proposed work and available options, and estimate the costs. Other associations are a good resource and may have valuable suggestions from their own experience.

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- Draft specifications for the project – The specifications should be as complete as possible, outlining in detail the specific services to be performed, the materials and equipment to be used, and either the frequency with which the services will be performed or the beginning and completion dates for a one-time contract. Inadequate specifications can result in bids that vary substantially and make comparison difficult or impossible since the bids will have been based on different interpretations of the specifications. To avoid this problem, it may be desirable to hire a consulting firm to draw up specifications. Another source of expertise is material suppliers, some of whom will prepare specifications free of charge in exchange for specifying their materials.

- Determine Responsibility for Permits and Inspections – Major improvements such as installation of a tennis court or swimming pool usually require more than one County permit to insure that the project complies with County zoning requirements and that the work is constructed in accordance with state and/or County codes. If the work is contracted, the specifications must make the contractor responsible for obtaining the permit(s) to put responsibility for code compliance, required inspections, and construction approval on the contractor rather than the association. The contract payment schedule should require County inspections and approval of the work as well as cleanup of the site before final payment. Contact the Zoning Evaluation Division at http://www.fairfaxcounty.gov/ocp/zed_homepage.htm or call (703) 324-1250 for special use permit(s); For construction permit information contact the Permits Division at http://www.fairfaxcounty.gov/dpwes/construction/permits.htm or call (703) 324-1555.

- List Contractors – Compile a list of contractors using the recommendations of other associations, personal experience, membership lists of professional trade organizations, and other sources;

- Prepare Request for Proposal – Prepare an RFP letter inviting these firms to submit bids or make presentations to the association. The letter should contain a copy of the specifications, the due date for submission of the bid, the date the contractor will be selected, the terms and conditions of the contract and the name and telephone number of the person to contact concerning any questions a potential bidder may have. Information about the association should also be included. For example, when soliciting bids for management services, enough information should be provided to enable a firm to make an intelligent bid for the contract. This would normally include data about the age of the development, kinds and numbers of units, acreage in the development and recreational facilities. Copies of governing documents, rules, regulations and financial data including the operating budget; and reserve fund balance should also be provided.

- Check References – Once the bids have been received, the reputation, experience and references of the firm(s) most likely to be selected should be thoroughly checked. The Better Business Bureau at (202) 393-8000 or http://www.bbb.org, and the Consumer Protection Division at http://www.fairfaxcounty.gov/living/cable/default.htm or (703) 222-8435 may be able to provide information concerning complaints filed against a contractor or company and how they were resolved. The firm's suppliers can be

contacted to determine if the firm pays its bills on time. Its staffing, equipment and status of license should be verified to make certain it is qualified to handle the job;

- Verify County Licenses – Fairfax County requires that persons performing certain services be licensed and bonded as home improvement contractors. County licensure requirements do not apply to landscapers or painters but do apply to installers of aluminum or other siding, concrete work, structural changes involving doors, fire damage repairs, masonry, roofing, swimming pools, waterproofing and most other home improvement type work. Electricians, gas fitters, plumbers, and heating and air-conditioning contractors must also be licensed. The DPWES Licensing Section (703) 324-1540 will verify if proposed work requires a licensed contractor and whether a particular contractor is currently licensed and bonded. The DPWES Code Enforcement Branch at http://www.fairfaxcounty.gov/dpwes/navbar/about_us.htm#address or at (703) 324-1937 receives complaints about unlicensed contractors;

- Verify State Licenses – Depending on the nature of work and contract value, contractors may be required to be licensed by the Virginia Board for Contractors. License status and whether complaints have been filed against a contractor are available by calling the board at (804) 367-8504, or at http://www.state.va.us/dpor/indexie.html;

- Conduct Interviews – Schedule an interview with the potential contractor(s). This will enable the association to ask questions and gauge the firm's attitude toward the job, as well as permit the contractor to perform an on-site evaluation of the community and/or work prior to accepting the contract;

- Analyze Bids and Select Contractor – Select the contractor based upon detailed analysis of the bids received, evaluation of each firm's reputation and experience, and results of the interviews. A contract should be reviewed by the association's attorney prior to signing to assure its terms are in the best interest of the association. A major contract is one reason to hire an attorney if the association doesn't have one;

- Notice of Award – Notify all bidders of the association's decision to award, and thank them for their interest in working for the association;

- Make Contract Copies – Provide a copy of the contract to the person who is responsible for liaison with the contractor and the monitoring of the contractor's performance.

Based upon the scope, cost and duration of the proposed work, an association should consider hiring a professional who is experienced in this type of work. A thorough legal review of all contracts is very important to minimize the association's risk of inadequate protection provisions, loss of accumulated reserve funds, and exposure to liability claims. While contract terms and provisions vary, the following items must be clearly addressed to protect the association and to avoid misunderstandings:

- The lines of authority – the contractor must have the name and phone number of the person to whom he reports and from whom he takes instructions. Confused lines of

authority often result in conflicting demands being made on a contractor, extra costs billed to the association, and the dissatisfaction of both parties;

- The scope of the work – the product, service, material, equipment, personnel, etc., that will be provided and at whose cost, should be specified in the contract or be attached to the contract by reference;

- Permits or inspections – when required, who obtains and pays for permits; and who is responsible for requesting inspection and approval from the appropriate authority;

- The total cost and terms of payment – should be clearly laid out and include the payment schedule and the amount of each installment;

- The time-frame of the contract – the duration of the contract with beginning and completion dates should be specified;

- The responsibility for liability insurance, etc. – the contractor and all subcontractors must provide proof of worker's compensation, personal injury, liability and property damage insurance;

- Damages to association property – the responsibility of the contractor should be spelled out in case of damage to association property;

- A recourse provision – the right of recovery by the association should be included in case of negligence by the contractor;

- All modifications must be in writing – provisions and procedure for contract changes and modifications;

- The conditions for termination of contract – conditions and provisions under which the contract may be terminated before completion, including financial or other consequences to the association and contractor;

- Warranties – warranty terms for labor and materials.

The association should develop a good working relationship with the contractor to regularly monitor the work and promptly resolve problems. All problems/concerns of the contractor should be discussed with the association liaison. A well-drafted contract and regular communications will help to make an association's dealings with contractors successful.

Utilities:

Utility costs vary substantially. An association with few facilities may have minimal utility costs, while an apartment-style condominium may be responsible for all the electric, natural gas, water and sewer expenses in the development and find utility costs a significant

portion of its budget. (See also, "County Utility Taxes"). When projecting utility costs for budget purposes, there are several general steps to be followed, including:

- an inventory of all facilities/appliances that use the metered commodity, and note the location of each meter and the facilities/appliances served;

- information from past billings (1-5 years if available), to average the monthly consumption (such as kwh of electricity or therms of gas) and seasonal rate variations, etc. If the association has more than one meter that serves similar facilities, note any variations in usage that may indicate waste;

- seasonal adjustments for anticipated changes in consumption; e.g., conservation measures or added facilities and/or appliances;

- identifying the current rate schedule(s) used for billing, and if a rate increase, surcharge, or fuel adjustment factor is expected, and, if so, when it will most likely go into effect;

- calculating the cost of estimated usage for the coming budget year, adding in utility taxes, seasonal surcharges, and fuel adjustment factors.

Savings can often be realized by carefully analyzing utility usage and eliminating waste. Electricity may be saved by reducing light bulb wattage or the number of lights (assuming no substantial impact on safety), using timers to turn on electrical facilities as needed, etc. Often utility companies provide advice about conservation measures that can be taken. The following publications discuss various methods to reduce energy consumption in multi-family buildings:

- Energy Cost Control Guide for Multifamily Properties, by the Institute of Real Estate Management and the U.S. Department of Energy, (1981);

- Low-Cost/No-Cost Energy Conservation Measures for Multi-Family Housing, prepared by the Institute of Real Estate Management and the U.S. Department of Energy, (1981);

- Alternatives to Master Metering in Multifamily Housing, by the Institute of Real Estate Management, 430 N. Michigan Avenue, P.O Box 109025, Chicago, Illinois, 60610-9025; and the U.S. Department of Energy; (1981);

- Energy Audit Workbook for Apartment Buildings, prepared by the U.S. Department of Energy, Washington, D.C., 1979, Publication number DOE/CS-00411; available from the National Technical Information Service [NTIS], U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Va. 22161; Tel. (703) 487-4650); Cost $34.

  Electricity - Dominion Virginia Power and Northern Virginia Electric Co-op supply electricity to County residents. Electrical costs for most community associations are limited to those incurred for outdoor lighting and recreational facilities. Condominium unit owners' associations are responsible for the electricity used in their common areas and may also be responsible for paying for all electrical consumption in the development.

Sub-metering and Individual Metering - If the electricity service in a development is master-metered, the electric company bills the association for the total electricity consumed through the master meter. Such systems may be eligible for bulk rate electricity depending upon the size of the community served and the amount of electricity consumed. The association might still consider the feasibility of sub-metering to make each household responsible for its own electrical usage. Sub-metering (or individual metering) allocates electrical usage to those responsible and tends to promote energy conservation. The association is responsible for reading each unit's meter, preparing the bills, and collecting reimbursement monies due to the association. The Virginia State Corporation Commission (SCC) has regulations governing electrical submetering. A copy of the regulations is available from the SCC at 1-800-552-7945, or (804) 371-9733, or at http://www.state.va.us/scc/index.html

Individual metering refers to the installation of a meter in each unit by the electric company, making each household a residential customer. The electric company reads the meters, bills each household, handles service complaints, etc., and the association is billed as a separate customer only for the electricity used in the common areas and facilities. If the electric service in a residential association is master-metered and the association wants to convert to individual metering, the association is responsible for the costs incurred for rewiring or retrofitting and for the individual meters. Such conversion to individual metering in a master-metered building can be costly, and it is suggested that an association contact its electric utility for assistance when conducting a cost and feasibility analysis for individual metering.

Electric Outdoor Lighting - Street lighting in residential areas is not required by the Fairfax County Zoning Ordinance. The County street lighting program provides lighting only on public streets in the VDOT state secondary road system to deter crime and to light hazardous roadway intersections. Privately owned streets do not qualify for such lighting. For the criteria to qualify for County-provided street lighting, an association adjacent to public streets in the state system should contact DPWES at (703) 324-5800, or online at http://www.fairfaxcounty.gov/dpwes/utilities/streetlightmain.htm.

Outdoor lighting discourages crime, helps to prevent accidents, and extends daylight hours for recreational and business purposes. Outdoor lighting fixtures can be leased from the electric utility company. Electrical power and maintenance are provided for a set monthly fee per fixture (plus fuel adjustment charge). In July, 1993, the State Corporation Commission granted permission for Dominion Virginia Power to expand its "NightWatch" Outdoor Lighting Service for installation of high pressure sodium vapor lights to multi-family residential, and to some non-residential customers. Sodium vapor is the most efficient lighting source available for outdoor purposes. The "NightWatch" program is available to single family homes, places of worship, civic organizations, and multi-family structures such as condominiums and property owners' associations, townhouses, and apartments. Commercial properties are also eligible where poles exist.

"NightWatch" provides outdoor lighting fixtures and maintenance for a fixed monthly fee added to the monthly electric bill. While the monthly cost varies, based upon the style and size of the light, a basic fixture costs approximately $10 - $15 per month. In some cases there may be a separate installation fee, along with a one-time initiation fee. Dominion Virginia Power has several fixture styles to address different needs and conditions. They will install and maintain the lights for a monthly fee, or the user(s) may purchase the lights and have them installed by their own contractor. Some associations own their outdoor lighting fixtures, pay for the cost of electric service and usage but are responsible for maintenance of the fixtures. Maintenance costs and replacement reserves for outdoor lighting fixtures should be included in these associations' budgets in addition to the electrical consumption.

Maintenance costs for outdoor lighting vary substantially, depending on the type of lighting (incandescent, mercury vapor, or sodium vapor), amount of illumination (lumens) produced by the fixtures, and the life expectancy of the lamp (bulbs). Additionally, the age, height, durability of globes or lenses, type of wiring, etc., will affect maintenance costs. An electrical contractor may be required to perform maintenance and repairs on HOA owned systems. The cost of the services of an electrical contractor will depend on the equipment necessary to perform the maintenance. Some private electrical contractors provide maintenance contracts for outdoor lighting. The terms of a maintenance contract may, for example, include two maintenance service visits per year for a set fee. The service is basically designed as a preventive measure and will include such things as checking the transformers, wiring and connectors; cleaning the fixtures; and checking for cracks in the lamps to prevent moisture seepage. Area contractors and suppliers can provide guidance about the costs of labor and replacement parts for outdoor lighting fixtures, if an association does not have past experience on which to base these costs.

Associations contemplating replacing their present type of outdoor lighting with a more energy efficient type of lighting (e.g. changing from mercury vapor to sodium vapor lighting) should research the conversion and maintenance costs carefully and compare them to the long-term savings attained through reduced energy usage before making the change. Changing from one type of outdoor lighting to another can be a very expensive procedure as ballasts, bulbs, wiring, etc., for different types of fixtures are often not interchangeable and require replacement of the present fixtures with new ones. The replacement costs of the component parts of more efficient fixtures may be more expensive than their less efficient counterparts.

Reserves for outdoor lighting fixtures should be based on their replacement cost and a life expectancy of 15-20 years. An association may want to base its reserves on the cost of replacing its present lights with a newer and more energy efficient lighting system, rather than the replacement costs of the lights currently installed. If so, a review of the innovations in lighting and their life-cycle costs should be made every few years to assure adequate reserves are available when needed. For inquiries or problems regarding rate schedules or electrical service, an association can contact its electrical service supplier at the following offices:

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Dominion Virginia Power Co.
11133 West Main Street
Fairfax, VA 22030
customer service

http://www.dom.com/index.jsp
e-mail: Customer_Service@dom.com
(888) 667-3000 or (703) 934-2519 for

Northern Virginia Electric Cooperative (NOVEC)
P.O. Box 2710, Manassas, VA 20108-0875
(703) 335-0500; Toll-Free: (888) 335-0500

http://www.novec.com
E-mail to: info@novec.com

Natural Gas - Natural gas is supplied to Fairfax County by Washington Gas, a division of Washington Gas Light Company, and by Columbia Gas of Virginia, Inc. Associations typically use gas for outdoor lighting, swimming pool heaters, hot water heaters and space heating (individual units and common boiler systems). An association may have master-metered gas systems; if so, the association should be aware of its responsibilities for operation and maintenance. The gas company is responsible for the maintenance of the pipes on its side of the meter whereas maintenance and repair of any underground gas pipes on the (downstream) association's side of the gas meter is the Association's responsibility. In high-rise, garden style, townhouse or other multi-family type construction, it is very impractical to provide separate meters for each residential unit due to the large size. The association must develop a fair and impartial formula to account for variable unit volumes and the number of occupants to allocate the master-metered cost to individual residential units, as well as a uniform cost for each unit's share of common element gas usage.

In 1968 Congress passed the Federal Gas Pipeline Safety Act to deal with the dangers posed by gas leaks from corroded pipe. The Act mandates certain construction, maintenance and safety standards for gas pipelines. While the Act is aimed primarily at utility companies and major gas distributors, under its provisions, condominium and homeowners associations that are responsible for gas pipelines are considered operators of gas distribution systems and must comply with the regulations issued by the U.S. Department of Transportation's Office of Pipeline Safety. A written Operation and Maintenance (O and M) plan is required of all gas operators by the pipeline safety standards and must include steps to be followed to accomplish the required operational and maintenance procedures. If you are a master-meter customer, your O and M plan must include the following procedures:

- Instructions for Employees
- Emergency Procedures
- Line Markers
- Patrolling
- Leakage Surveys
- Abandonment of Facilities
- Testing for Reinstating Service Line
- Accidental Ignition of Gas
- Key Valves Maintenance
- Measuring the Odorization of Gas
- Cathodic Protection
- Leak Repairs – Construction
- Emergency Plans

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A condominium or homeowners association maintain and follow an organized O and M plan for compliance with federal law and as protection and defense against any civil suit(s) for damages from the gas system. The Guidance Manual for Operators of Small Gas Systems, published by the U.S. Department of Transportation, Research & Special Programs Administration, 2002, for small operators such as master-meter systems, details these procedures and explains requirements of the pipeline safety act. The 2002 edition of the Manual is online at http://www.tsi.dot.gov/divisions/pipeline (see Publications). Contact the following for more information:

Washington Gas
Customer Services Division
1100 H Street, NW
Washington, DC 20080
(703) 750-1000
http://www.washingtongas.com

Transportation Safety Institute
Pipeline Safety Division
6500 S. McArthur Blvd.
Oklahoma City, OK 73125
(405) 954-3153 or (405) 954-7219
http://www.tsi.dot.gov/divisions/pipeline/pipeline.htm

American Gas Association
400 N. Capitol Street, NW
Washington, DC 20001
Phone: (202) 824-7000
http://www.aga.org

Water / Master Metering - The Fairfax County Water Authority supplies Water to most associations in Fairfax County, however the towns of Vienna and Herndon and the cities of Falls Church and Fairfax also provide some water service. Most condominium and homeowner associations are responsible only for the water used by their recreational facilities. However, some associations are master-metered, and the association pays for all water used in the community. Master metering makes it difficult for an association to institute and enforce water conservation programs, as it is difficult to identify those households that waste water. Due to the extensive plumbing required to convert from a master metered system to individual meters in apartment buildings, the Fairfax County Water Authority does not view this as a viable way for an association to reduce its water costs. However, it may be economically feasible for master-metered townhouses to convert to individual water meters, thus providing each household with control over its own water and sewer costs. Associations interested in changing to individual meters should contact its water supplier for more information.

The two most important factors in minimizing association water costs are the proper maintenance of plumbing fixtures and the use of good conservation techniques. Fixtures that do not operate properly can waste considerable amounts of water. Leaking faucets and commodes that run continuously are among the most common cases. A single malfunctioning fixture can affect the efficient operation of the entire plumbing system and cause excessive repair and labor costs. Associations can contact the Water Authority's Customer Service Department for help in locating water-wasting fixtures, and for help in implementing water saving techniques.

Community associations are generally responsible for maintaining all water pipes that serve the common areas, and individual homeowners are responsible for pipe maintenance from the point where their plumbing system taps into the main system. In most instances the tap for each dwelling is in front of the house. However, in some townhouse developments, this tap to the main may extend through one or more yards and under common lawn areas, streets and/or sidewalks. Often property owners are not aware of this at the time of purchase, nor are they aware of the potential cost of such extensive plumbing work when required.

Water for Swimming Pools - Commercial and residential customers are charged quarterly for their normal water consumption based upon the metered volume, and charged again (on the same volume) for sanitary (sewer) treatment services. Swimming pools, however, are typically filled or "topped off" once annually before the start of the swimming season and the concurrent high-cost water use season. Further, because of the harmful affect of chlorine on the sanitary (sewer) treatment process, swimming pools discharge into storm drains and bypass the sanitary treatment system. The Fairfax County Water Authority can pass the considerable cost savings for non-peak-season water consumption and for no sanitary waste treatment to the user/association, provided that certain conditions are met.

Condominium and homeowner association swimming pools (and privately owned pools) must be sub-metered separately from the domestic supply and must be filled by May 15th to avoid the high-peak-use rate that becomes effective as of the June 1 each year. To be exempt from sanitary treatment charges on the pool water volume, an association must call the Water Authority at (703) 698-5600, or the Authority's "Pool Line" at (703) 289-6188 *each year* to request an Exemption Form with the association's (or individual's) address and account number. The form will be mailed to the association address to be completed, signed and returned to the Water Authority prior to the June 1st deadline. More information about zoning, permits and construction of swimming pools in Fairfax County is at http://www.co.fairfax.va.us/gov/dpwes/publications/pool.htm.

Sewer Service - The Fairfax County Department of Public Works provides public sewer service to most associations. Lateral pipes connect the sanitary waste collection system in a house or building to the street main. Property owners are responsible for maintenance and repairs out to the lateral connection to the main. In condominiums, laterals are common elements and are clearly the association's responsibility. If a sanitary system problem occurs, contact the Line Maintenance Division at (703) 323-1211 to determine the repair responsibility. General information and non-emergency calls should be made to (703) 324-5020.

Sewer charges for individually metered homes are based on the amount of water used or a County average for the winter quarter. Most condominium associations are master-billed according to the total amount of water used. Individual unit charges are included in the monthly dues and may be prorated by the association according to the residential unit size and/or number of unit residents. Various water suppliers in the

county collect fees for sewer service based on the quantity of water used, but the Fairfax County Board of Supervisors sets the fee rates. The cities of Falls Church, Herndon, Vienna and Fairfax levy their own sewer charges for customers using their sewer systems. Rates and billing procedures for an association's water supply/sewer service can be determined by:

Fairfax County Water Authority Customer Service
(703) 698-5800 / http://www.fcwa.org/customer/index.htm

Fairfax City Department of Transit and Utilities
(703) 385-7915 / http://www.ci.fairfax.va.us/Services/Utilities/utilities.htm

Vienna Water/Sewer
(703) 255-6385 / http://www.ci.vienna.va.us/TownServices/watersewer.htm

Falls Church Water/Sewer
(703) 248-5071 / http://www.ci.falls-church.va.us/services/index.html#water

Herndon Water/Sewer
703) 435-6853 / http://www.town.herndon.va.us

Miss Utility - All major area utilities participate in the "Miss Utility" program which locates and provides information about underground utilities to prevent damage and severing of service during construction projects. Utility companies hold property owners responsible for damages to underground utilities resulting from digging operations. Associations and their contractors should call "Miss Utility" at 1-800 257-7777 or contact online at: http://www.missutility.net/northernvirginia.asp. This is another important contractor requirement to be written into any association contract. The Miss Utility program guarantees that within 48 hours of being contacted (excluding weekends), the companies involved will visit the location and mark the areas where their cables, pipes and other utilities are located. To eliminate the possibility of severing a pipe or cable, the contractor must not dig closer that three feet to either side of the utility location markings. The contractor has 10 working days to complete the excavation and underground work in the vicinity of the utilities.

Wells - Fresh Water Domestic Supply - Groundwater beneath the earth's surface is the earth's largest fresh water supply, and protection of this resource is vital. Clean, potable well water is a vital domestic necessity because more than 15,000 homes and businesses in Fairfax County rely on groundwater wells for their domestic water supply. The Fairfax County Health Department reviews and inspects well construction to assure that the groundwater supply is protected from potential contamination. Improper use and/or disposal of fertilizers, herbicides, pesticides, motor oil, solid wastes, paint solvents, detergents, cleansers, and other toxic household chemicals and substances constitute a major threat to the groundwater supply. Underground storage tanks for home heating oil or other toxic materials can corrode, allowing pollutants to leak into the groundwater – one quart of oil can contaminate up to 2 million gallons of water. If not properly

maintained, septic tanks (common in areas served by groundwater wells) may also threaten the quality of water drawn from private and community groundwater wells.

All well work, whether initial drilling and grouting, or repairs and/or additions to equipment on existing wells must be done by licensed and bonded contractors who have Health Department authorization to perform work in Fairfax County. A permit is required prior to making repairs or installing conditioning equipment on any well in Fairfax County. The Health Department will assure not only that the work is needed, but that it is done properly, and will test the water for bacteriological quality after the work is completed. The Health Department recommends that wells be tested yearly, after any repairs to or construction around a well, or if a change in taste or color of the water is noticed. In addition to protection standards and bacteriological quality testing, the Health Department can test for and conduct a chemical analysis for iron, lead, acidity or hardness of water.

If an association is served by private or community wells, and is at risk of property damage and/or personal injury claims stemming from contamination of groundwater resulting from maintenance activities, the maintenance staff (whether association employees or contracted services) should be made aware of the existence of the wells. Maintenance procedures should be tailored to prevent even potential contamination of the groundwater, either by surface runoff or by ground percolation. Curbs or roadside ditches and the stormwater management system (including detention and retention ponds), and adjacent woodlands and streams are favorite locations for illegal and hazardous disposal of toxic substances. An association can help to protect groundwater quality by informing its members through an awareness/education program that focuses on the proper disposal of toxic and hazardous substances. Steps to protect well water supplies include:

- do not store toxic or hazardous substances near any well; do not overuse or abuse fertilizers, pesticides or herbicides; carefully follow package or container directions for storage and disposal of all potentially toxic substances and materials;

- do not flush toxic or hazardous substances down toilets or pour them into home drains, storm drains, on the ground surface or into streams and drainage channels; and

- call the County Health Department for advice and information on proper disposal of toxic substances or to have a well inspected and tested.

Septic Tanks, Required Maintenance - Septic tank systems, consisting of an underground receiving/holding tank and sub-surface distribution and absorption system for domestic wastes, are used in many parts of Fairfax County where public sewers are not available. Wastewater and solids from sinks, showers, toilets, washing machines and dishwashers that normally flow into a sanitary sewer, flow instead into the septic tank. The solids settle to the bottom, are digested by bacteria, and broken down into sludge that

accumulates over time. Grease, scum and other substances float to the top. The remaining contaminated effluent and polluted waste liquids flow into the sub-surface distribution and absorption system where they are "leached" into the soil, filtered and purified by the continued natural bacterial processes, and eventually return to the groundwater supply.

When properly maintained, a septic system can be expected to provide an extended and trouble-free service life. However, non-biodegradable detergents, caustic drain cleaners, and other toxic household products, can retard or kill the bacterial action in the tank or ground. Similarly, careless and/or thoughtless disposal of toxic materials on the ground surface near septic fields can be as harmful as if discharged directly into the tank. An association's maintenance staff or contractor should know the locations of the septic tank, distribution box and flow diversion valve (if part of the system), and the perimeter of the absorption/leeching area or field. Trees, shrubs and other landscape material (except grass) should not be planted closer than one mature plant diameter from the perimeter of the septic field, and no driving or parking of motor vehicles over any part of the system should be permitted. Such abuse, or even simple neglect, can cause the system to malfunction or fail, making costly repairs necessary, and creating a health hazard for those who are dependant upon the local ground water for domestic consumption and use.

State law requires regular maintenance of septic tanks. The Fairfax County Code and the Virginia Chesapeake Bay Preservation Act require all septic tanks to be pumped out at least once every five years by a licensed contractor who will provide a written manifest to be sent to the Health Department to verify compliance with the law. Regular tank pumping decreases the likelihood that accumulated sludge and grease will clog the drain field, a major cause of premature system failure and helps to protect ground and surface water resources. Typically, such failure (loss of percolation) is long-term or permanent, requiring the construction of a new drain field elsewhere on the site at considerable cost. Septic system repairs or reconstruction require a cost-free permit from the Health Department.

An on-site septic system for the public facilities (pool bathhouse and rec. center rest rooms and kitchen, etc.) in an owners' association must be regularly pumped. The association should include this required service in its operations schedule and budget to prevent the consequences of a septic system failure. If the Health Department has not been notified of septic system pumping, the association should send the pump contractor's bill or a letter identifying the association, the address of the septic system, and the date the system was last pumped to the Division of Environmental Health. For a list of licensed septic system contractors, to abandon an existing septic system and connect to a public sewer, for a required septic system repair permit, or for other information concerning septic systems, contact the Health Department at (703) 246-2201 or online at http://www.fairfaxcounty.gov/service/hd/ehdweb.htm.

Refuse / Solid Waste / Trash Collection - Solid waste and refuse collection in Fairfax County is provided by public or private services regulated through Section 109 of the County Code. County service in special sanitary districts (only) provides weekly

curbside collection of recyclables, refuse, and bulky items for an annual fee for approximately 38,000 customers. In other residential areas of the county, normal household trash and refuse are collected at least once per week by solid waste collection companies which must have a County permit. Dead animals, manure, tree stumps, dirt, stone, rock or brick, poisons, dangerous chemicals, explosives, and refuse too heavy to be safely loaded in collection vehicles are not required to be collected. These items can be collected on a request basis for a separate fee or must be taken to a designated disposal location.

The Fairfax County Department of Public Works, Division of Solid Waste Collection and Recycling and the Division of Waste Disposal and Resource Recovery regulate the more than 30 private refuse collection firms that operate in the County, and investigate complaints of recycling or refuse collection violations. A refuse collection permit is granted only after a firm provides evidence of having public liability insurance covering its operations and vehicles, and shows that it will provide county-required minimum levels of service. Each firm is required to maintain a business office and to inform customers, in advance, of the firm's name, address, and telephone number; the company rules and regulations regarding its service and collection schedules; and its policy concerning collection on holidays and snow days. No advance billing for refuse service in excess of 90 days is permitted. Persons observing improper collections or who have trash collection/disposal questions should contact the Fairfax County Department of Public Works, Division of Solid Waste Disposal and Resource Recovery at (703) 324-5230 or at http://www.fairfaxcounty.gov/dpwes/trash/refusecollection.html

Recycling Collection - Fairfax County has a mandatory recycling program applicable to all residences including apartments, condominiums, town houses, single family homes, etc. This program began in 1987 with curbside collection of newspapers. In 1993, the program expanded to include weekly collection of most recyclable materials such as newspaper, steel and aluminum cans, and glass containers, (plastics, cardboard, aseptic packaging and other miscellaneous materials are voluntary). The separate collection of yard debris was added in 1994.

The success of any recycling program is dependent upon the cooperation of the contributing residents at the beginning of the collection/recycling process. The Fairfax County Code requires that designated recyclable materials be source separated – meaning the exclusion and separation of required recyclable material(s) in a separate location and/or container at the residence, and distinct from solid waste and trash intended for disposal. Further, the co-collection of source-separated recyclable materials and disposable trash in the same vehicle is a violation of the County Code. All solid waste collectors must provide collection of recyclable materials to all of their customers. Some companies collect recyclable materials on different days than disposable trash to further reinforce the need for material separation at the source.

The physical layout of a development and type of residential structure(s) can affect the type, location and convenience of collection facilities while education, promotion and cooperation of the residents determines the overall success of a recycling program. The association management has an important role in motivating the residents

to participate willingly. In communities of single-detached homes where each family contracts directly with the collection company, the recycle collection conveniently requires placement of separated materials at the curbside on collection days. Some associations, however, include collection of disposable trash and recyclable material in the property assessment and may have a recycle center located on community common ground. Disposable household trash is collected at each residence whereas recyclable materials must be brought to the community collection point. This minor inconvenience may be offset by reduced collection costs.

Residential apartment, cooperatives, condominium and townhouse associations in Fairfax County are required to provide residents with the opportunity to recycle newspapers, steel, aluminum, bi-metal and glass food and beverage containers. The fundamentals of recycling in multiple-family dwellings are the same regardless of whether the structure(s) is/are garden style or high-rise. The key elements are flexibility in the approach and planning of the recycling program, and proper communication between the association, management and the residents. It is important to emphasize education, awareness, cooperation and flexibility of the building staff and residents, not only before, but throughout the life of the recycling program. The successful apartment, condominium and townhouse recycling programs have been modified over time to incorporate practical experience, "user-friendly" adjustments, changing conditions, and resident feedback. The owners' and managers' willingness to be flexible is essential for a program that "fits" the building and is convenient for residents, building staff, and the solid waste collector. Building and property managers should remember that if residents are motivated to recycle "because it's the right thing to do" rather than being ordered to comply, they become a resource for implementing and maintaining a successful recycling program.

It is highly recommended that property managers work with the solid waste collector in performing a site assessment and "recycling/waste audit" for the complex. This assessment should provide a comprehensive picture of solid waste generation and the handling process and disposal system for the complex, as well as verify the type and volume of collection containers or equipment and the frequency of service. Residents should be actively involved in planning and monitoring of the program as well as the source separation. This involvement educates and motivates residents to participate, puts a positive slant on the program, frees association staff, and minimizes costs. The system determined by the waste collector's "recycling/waste audit" and collection schedule must be convenient and "user-friendly" to gain the support and cooperation of the residents. Communication between management and the residents through a community newsletter or bulletins, a "recycling committee," discussions at meetings, and system flexibility based upon resident feedback are all essential elements of successful recycling programs. Other essential elements include the program design and operation, safety and security measures, signage, education, organization, and positive reinforcement. Assistance in establishing a successful community recycling program is available from the Fairfax County Recycling Hotline at (703) 324-5052, or from the Solid Waste Collection and Recycling Div. at: http://www.fairfaxcounty.gov/dpwes/trash/refuse_collection.html

Contract Guidelines for Collection and Recycling Services - Many associations contract for refuse and recycling collection services for all of their residents and include the cost in the monthly assessment. By volume contracting on behalf of all residents, the association may be able to negotiate a better collection fee at a volume discount and even include collection for the common areas and facilities. Rates for private refuse collection are affected by:

- the number of pick-ups per week;
- the type of service contracted for – centralized dumpster or individual curb service and whether the contractor provides trash containers;
- whether an association contracts for all units in the development or just the common areas and facilities;
- whether the special pick-up of large and bulky items is included in the contracted service, or separately charged; and
- whether the association specifies a short or long time period for collection, e.g., 8 8:00 a.m. to 11:00 a.m. or 7:00 a.m. to 3:00 p.m..

Whether the association refuse collection service is limited to the common areas and facilities or includes individual living units as well, the association must determine if the present service is satisfactory or whether it should seek different contracted terms, or a different firm. In Fairfax County, it is illegal to contract with an unlicensed solid waste collection firm and an association can be fined for contracting with an unlicensed collector.

Lawn and Grounds Maintenance

An association's maintenance responsibilities will depend upon the size and type of the common areas, their structures, landscaping, and use. A comprehensive grounds maintenance plan will: (1) present a neat community appearance, (2) preserve the community's investment in grass, trees, shrubs and equipment, (3) help to maintain property values, and (4) project a sense of pride among the association's residents. A comprehensive maintenance plan usually includes an annual and long-term program and removal of yard debris produced by maintenance activities. Condominium and townhouse communities might obtain an exemption from mandatory yard debris recycling if their landscape maintenance contractor removes and recycles the yard debris. Contact http://www.fairfaxcounty.gov/dpwes/trash/refuse_collection.html online or call the Recycling Hot Line at (703) 324-5052. Annual grounds maintenance programs describe the tasks that are to be performed on lawn areas, wooded areas, play areas, etc. throughout the year, including a schedule for their performance, and assign responsibility for completing each task. Lawn areas usually require the following maintenance tasks:

- weekly lawn mowing and trimming around buildings, walks, structures, fences, trees, ponds, playgrounds, etc., (20-25 mowings per year);

- edging along walks, curbs, and pavements (4-5 times per year);
- seeding, fertilizing, liming, herbicide and insecticide applications as needed and/or recommended by a lawn care professional;
- mulching and pruning of shrubs and trees to remove dead and unsafe branches and to retain proper shape and size;
- spring and fall grounds inspection and clean-ups of trash, debris, storm damage, and other unsightly and unsafe conditions; and
- general maintenance of active playgrounds, ball fields, and park or wooded areas, including fence and equipment repair, painting, replacement of sand or wood chips, repair of erosion or storm damage, vandalism, and preparation of ball fields for use.

A long-term grounds maintenance plan will outline a multi-year program for facility development and grounds care including a schedule of infrequent maintenance tasks such as painting of benches, trash receptacles, signs, outdoor lighting, etc. The following Internet links provide a wealth of published information and technical guidelines for turfgrass, lawn, garden and tree maintenance topics from the Virginia Cooperative Extension Service (703) 324-5310 in Fairfax County):

http://www.ext.vt.edu
http://sudan.cses.vt.edu/html/Turf/turf/links/links_page.html
http://sudan.cses.vt.edu/html/Turf/turf/index.html
http://www.ext.vt.edu/resources/anrpublications.html

The Fairfax County Library has numerous books on landscape and lawn maintenance. Additionally, the following publications may prove useful to associations in preparing a ground care program:

- Citizens Water Quality Handbook, prepared by the Northern Virginia Soil and Water Conservation District (NVSWCD), 1994, (advises on lawn maintenance, open space management, stream management, water quality monitoring, and erosion control, and other topics). Contact NVSWCD at http://www.fairfaxcounty.gov/nvswcd or at (703) 324-1460.
- You and Your Land – A Homeowners Guide to the Potomac River Watershed – prepared by the Northern Virginia Soil and Water Conservation District (NVSWCD), 2002; (it advises homeowners and associations about the environmental relationships between residential properties and their affect on the larger Potomac River Watershed. Contact NVSWCD at http://www.fairfaxcounty.gov/nvswcd or at (703) 324-1460.
- A Handbook of Public Playground Safety, publication # 325, by the Consumer Product Safety Commission (CPSC), 2000, is a two-volume publication of safety guidelines for

new and existing playground equipment and surfaces. A free copy is available by sending a postcard containing the title, publication #325, your name and return address to: CPSC Publication Request, Washington D.C. 20207. For this and other free publications on playground safety, contact CPSC at (301) 504-0580 or online at http://www.cpsc.gov, select Library (FOIA), CPSC Publications, By Specific Topic, and Playground Equipment.

Professional Grounds Care Services - Many associations contract with professional service companies for some or all of their common grounds care. The contracting procedures described in Chapter 3 should be followed when contracting for lawn maintenance services. When evaluating a lawn maintenance firm, inquire about off-season staffing. Some firms rely on students to perform much of their maintenance work during vacation periods and may not be able to provide the same level of service during school periods in early spring and late fall. It is also advisable to visit an association or business currently using the firm under consideration to discuss and inspect the quality of the grounds care. The following ideas and activities may reduce an association's lawn care expenses:

- Hold community clean-up days in fall and spring. Some associations require each household to contribute either 4 hours of work on a weekend or "donate" $10-$15 to allow the association to hire someone to perform the work; others offer credit against the annual assessment.

- Purchase lawn care supplies rather than having them provided by a lawn maintenance firm. Use mulch around trees and transition areas to reduce the need for trimming; turn mulch and add only as needed rather than replace it annually.

- Obtain a free soil analysis by using the kits available at the County libraries. The kits are provided by the Virginia Cooperative Extension Service, which will determine the pH and levels of nutrients in the soil from which liming and fertilizing programs can be developed.

The following Guideline Specifications for Commercial Lawn Maintenance, written and published by the Virginia Cooperative Extension Service ((703) 222-9760 in Fairfax County) provides a good outline for maintenance needs of lawns in this area, as well as guidelines for bid specifications for contracted professional lawn maintenance services.

EXTENSION DIVISION
VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

GUIDELINE SPECIFICATIONS FOR COMMERCIAL LAWN MAINTENANCE [25]

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Issued in furtherance of Cooperative Extension Service work, Acts of May 8 and June 30, 1914 and September 30, 1977, in cooperation with the US Department of Agriculture. W. R. Van Dresser, Dean, Extension Division, Cooperative Extension Service, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061; M.C. Harding, Sr., Administrator, 1890 Extension Program, Virginia State College, Petersburg, Virginia 23803. An Equal Opportunity/Affirmative Action Employer. The Virginia Cooperative Extension Service, by law and purpose, is dedicated to serve all people on an equal and nondiscriminatory basis.

[25] John R. Hall, III, Professor, Department of Turfgrass Management, Crop and Soil Environmental Sciences,

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Introduction

This publication is designed to provide guidelines for consumers writing bid specifications for the purchase of professional lawn maintenance services on large lawn areas. It will be beneficial to managers of apartments, condominiums, estates, institutions, recreational areas and general turf areas who are seeking the services of a professional lawn maintenance company. It should be emphasized that these are only guidelines or items for consideration and that the success of any contract depends upon a competent contractor, under supervision of a knowledgeable approving agent. Obviously, an uncooperative party can make the best contract unworkable. Specification writers using these guidelines should not assume that the wording meets all the contractual needs of their particular situation.

To allow for most accurate bidding on the specifications it is suggested that a soil test sample randomly taken from the area to be maintained be submitted to either; Virginia Polytechnic Institute and State University or a reputable commercial laboratory. These results will be most helpful to contractors in pricing lime and fertilizer bids for the site.

How To Use This Publication

This publication is separated into the following four general categories of specifications. General support and responsibility specifications are considered essential in all bids. Basic and accessory maintenance items should be selected based upon individual desires. The italicized blanks in these specifications need to be filled in, or crossed out, making choices where necessary. It may be desirable in some situations to omit certain sections of these specifications, depending upon the services desired by the consumer.

General Support Specifications: Provides needed information about where the work is located, what areas are involved and what type of service is expected over the time period noted. This information should be used in all specifications.

Basic Maintenance Specifications: Provides guidelines for requesting the basic management services provided by commercial lawn maintenance companies.

Accessory Maintenance Specifications: Provides guidelines for maintenance procedures which are only periodically required in most lawns but may be necessary in the early stages of a contract to correct existing problems due to excessive thatch, compaction or the presence of weak turfgrass species in the lawn. In areas where very high quality is desired, most of these accessory items will be necessary.

Responsibility Specifications: Provides guidelines specifying labor and materials to be used, the contractor's responsibility to the consumer, the period covered by the contract and the nature of payment. This information should be used in all specifications.

For planning purposes, Table 1 indicates which maintenance specification would be considered essential for low, medium and high levels of turfgrass maintenance. The specification writer should utilize the specifications that will provide the desired level of turfgrass quality.

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Table 1. A summary of the maintenance specifications which are considered essential to obtain low, medium and high levels of turfgrass quality.

Maintenance Operations	Specifications Suggested for Various Levels of Turfgrass Quality		
	Low	Medium	High
Basic			
Mowing and Trimming	x	x	x
Edging			x
Leaf Collection		x	x
Fertilization	x	x	x
Liming	x	x	x
Herbicide Application		x	x
Accessory			
Fungicide Application			x
Insecticide Application			x
Aeration			x
Dethatching			x
Overseeding		x	x

I. GENERAL SUPPORT SPECIFICATIONS

A. Location and Participants:

Work is to be done at *(location)* to include area(s) on attached drawings. This area is *(owned / supervised)* by *(name of owner / supervisor)*. *(name of approving agent)* is the contractee's approval agent.

B. Scope of work:

This work includes all labor, materials, equipment, supplies and services necessary to maintain the above turf areas in a condition satisfactory to the owner during the period from *(beginning date)* to *(termination date)*.

II. BASIC MAINTENANCE SPECIFICATIONS

A. Mowing and Trimming:

1. Minor amounts of debris will be removed prior to mowing if shredding of the debris would be detrimental to the appearance of the turf area. Major amounts of debris will be considered the responsibility of the owner/supervisor and will be removed prior to mowing on a cost plus basis by the contractor.

2. General turf areas will be mowed at a mowing height of (see Appendix, note 1) inches

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when the grass reaches a height no more than 1/3 greater than the mowing height with a *(reel, rotary or flail)* mower. Mowing height on the cool-season turfgrasses will be increased by 25 percent in summer to reduce total stress on the turf. Mower heights are measured with mowers on a flat, paved surface. Mowers with sharp cutting edges shall provide a high quality of cut. Mowing will be accomplished in such a manner as to not damage trees and shrubs.

3. Mowing shall be required no more than 30 times per year. Mowings in excess of this will be provided on a cost per service basis.

4. Clippings will be removed from sidewalks, patios, etc. after each mowing. Clippings *(will / will not)* be collected and removed from the site after each mowing.

5. The contractor shall remove excessive clippings, resulting from growth rates that exceed the contracted mowing frequency, from lawn areas.

6. Trimming around trees and shrubs shall be performed after each mowing as necessary, using *(herbicides / hand labor / mechanical devices)*. If herbicides are used, they will be applied under the supervision of a Certified Pesticide Applicator in accordance with label use and approved industry practice.

7. Bid Quotation for A. Mowing and Trimming: $ _____ Per Service

B. Edging:

1. Edging of all accessible sidewalks, curbs and patios once per (service frequency) from (beginning date) to (termination date).

2. Dirt and debris from edging operations shall be removed and disposed of off-site.

3. Method of edging shall be mechanical.

4. Bid Quotation for B. Edging: $ _____ Per Service

C. Leaf Collection:

1. Leaves shall be removed from the site _____ times per year.

2. Times of removal will be: (30 day intervals suggested)
   Between _____ and
   Between _____ and
   Between _____ and

3. Leaf removal includes ornamental plantings, sidewalk, patio and driveway areas.

4. Bid Quotation for C. Leaf Collection: $ _____ Per Service

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D. Fertilization:

1. The fertilization program will provide the equivalent of (see "Lawn Fertilization in Virginia") ____ lbs. of soluble nitrogen per 1000 sq. ft. per year. Soil test samples will be analyzed by a mutually agreeable laboratory a minimum of once every 3 years.

2. Where Kentucky bluegrass, tall fescue, creeping red fescue or perennial ryegrass are being maintained, approximately 80% of the total nitrogen will be applied in appropriate split applications between the dates of August 15 and December 31, with the remainder to be applied from May 15 to June 30 of each year. The application amounts and timing will be in general agreement with Virginia Polytechnic Institute and State University Publication MA 168 entitled "Fertilizer Programs for Maintaining Kentucky Bluegrass and Tall Fescue."

3. Where bermudagrass or zoysiagrass is being maintained, the nitrogen will be applied in appropriate split applications between the dates of March 1 and August 1 of each year. The application amounts and timing will be in general agreement with Virginia Polytechnic Institute and State University Publication MA 169 entitled "Fertilizer Programs for Maintaining Bermudgrass and Zoysiagrass."

4. Corrective and maintenance phosphorus and potassium fertilizer will be provided as indicated necessary by the soil test submitted with this specification and by subsequent soil tests.

5. Bid Quotation for D. Fertilization: $ _____ Per Service

E. Herbicide Applications:

1. Preemergence herbicide for control of annual grassy weeds shall be applied as recommended in the current issue of Virginia Polytechnic Institute and State University Publication PMG 1 (or PMG 13) entitled "Chemical Control of Insects, Plant Diseases and Weeds", and in accordance with the label instructions. In newly overseeded areas, preemergence herbicides that allow continuing germination of turf seed shall be utilized.

2. Herbicide applications for control of existing broadleaf weeds will be made with herbicides or herbicide mixtures recommended in the current issue of Virginia Polytechnic Institute and State University Publications PMG 1 (or PMG 13) entitled "Chemical Control of Insects, Plant Diseases and Weeds" in accordance with label instructions.

3. Non-selective and/or preemergence herbicides shall be applied to cracks in paved areas as necessary for weed control.

4. All herbicides will be applied under the supervision of a Certified Pesticide Applicator. The contracting company accepts total responsibility for injury to ornamental plants that may result from herbicide applications.

5. Bid Quotations for E. Herbicide Applications:

Preemergence (Item 1)	$ _____	Per application
Broadleaf (Item 2)	$ _____	Per "
Non-selective (Item 3)	$ _____	Per "

F. Lime Application:

1. *(Agricultural ground limestone/pelletized agricultural ground limestone – See Appendix, note 3)* shall be uniformly distributed at an application rate of 50 lb/1000 square feet, and at 60-day intervals, until the total amount indicated necessary by soil test analysis is applied.

2. Bid Quotation for F. Lime Application: $ _____ Per application

III. Accessory Maintenance Specifications

A. Fungicide Application:

1. Fungicide applications to prevent common turfgrass diseases from causing serious damage shall be provided on a (preventive/curative-See Appendix note 4) basis when agreed between contracting parties. Disease control prescribed shall be achieved utilizing materials recommended in the current issue of Virginia Polytechnic Institute and State University Publication PMG 1 (or PMG 13) entitled "Chemical Control of Insects, Plant Diseases and Weeds," and in accordance with the label instructions.

2. Bid Quotations for A. Fungicide Application:

Helminthosporium	$ _____	Per application
Rhizoctonia Brown patch	$ _____	Per "
Dollar Spot	$ _____	Per "
Fusarium Blight	$ _____	Per "
Snow Mold	$ _____	Per "

B. Insecticide Applications:

1. Insecticide applications to prevent common turfgrass insects from causing serious damage will be provided on a (preventative/curative – see Appendix note 4) when mutually agreed upon by contracting parties.

2. Insect control prescribed will be achieved utilizing materials and rates recommended in the current issue of Virginia Polytechnic Institute and State University publications PMG 1 (or PMG 13) entitled "Chemical Control of Insects, Plant Diseases and Weeds," and in accordance with the label instructions.

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3. Bid Quotations for B. Insecticide Applications:

White Grub	$ _____ Per application
Chinch Bug	$ _____ Per "
Cutworm, Armyworm, and Sod Webworm	$ _____ Per "
Billbug	$ _____ Per "

C. Aeration:

1. Aeration shall be accomplished utilizing a roller, drum or piston-type aerator with coring or open-spoon tines of ½ to ¾" diameter. Tines will penetrate the soil to a minimum depth of 1 ½ inches. Final aeration pattern will provide a minimum of 4 aeration holes per square foot of surface area. Aeration cores (will / will not) be collected (see Appendix Note 5).

2. Aeration shall be provided: (See Appendix note 5)

Between _____ and
(date) *(date)*

Between _____ and
(date) *(date)*

3. Bid Quotations for C. Aeration: $ _____ Per service

D. Dethatching: (See Appendix note 6)

1. Dethatching shall be done as needed to maintain thatch levels less than ½" thick.

2. Dethatching blades will be adjusted so as to not cause damage to the turf or detract from the quality of the turf two (2) weeks after dethatching.

3. Debris brought to the surface in the dethatching process shall be removed and disposed of off-site.

4. Dethatching shall be performed:

Between _____ and
(date) *(date)*

Between _____ and
(date) *(date)*

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5. Bid Quotation for D. Dethatching: $ _____ Per Service

E. Overseeding:

1. Overseeding of designated cool-season turf areas shall be accomplished from August 15 to September 30 or February 15 to March 30 utilizing a device or system which places the seed in direct contact with the soil.
2.
3. Dethatching shall precede overseeding of areas as noted in section D above when thatch buildup exceeds ½" thickness.
4. Cool-season turfgrass areas to be overseeded will be seeded utilizing blends or mixtures recommended by the Virginia Polytechnic Institute and State University publication MA 199 entitled "Species and Mixtures for Lawns and General Turf Areas." All Kentucky bluegrass and tall fescue mixtures will contain the Maryland-Virginia Recommended Label.

5. Rates for overseeding existing turf areas:

	Rate (1b/1000 sq. ft.)	
Seed being planted	If area has greater than 50% turf cover	If area has less than 50% turf cover
Kentucky bluegrass	1	2
Tall fescue	3	6

6. Bid Quotation for E. Overseeding:

Kentucky bluegrass @ 1 lb.	$ _____ Per 1000 Sq. ft.
Kentucky bluegrass @ 2 lb.	$ _____ Per "
Tall fescue @ 3 lbs.	$ _____ Per "
Tall fescue @ 6 lbs.	$ _____ Per "

IV. RESPONSIBILITY SPECIFICATIONS

A. Labor and Material:

1. Contractor agrees to furnish all labor, machinery, fertilizer, seed, sprays, etc. which are reasonably necessary to perform grounds maintenance in accordance with these specifications.

2. All machines will be of such type as to cause no hazard or danger reasonably foreseeable.

3. All material will be of such type and quality as to do the prescribed job without damage to existing desirable vegetation.

4. All personnel will be properly trained, licensed and conduct work in a professional manner with minimal disturbance to the contracting party.

B. Contractor's Responsibility:

1. Contractor agrees to adhere to these Specifications in performing the work required.

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Utilizing his/her best expertise and initiative, make any management recommendations to the contractee that will enhance the appearance of the grounds.

2. Contractor agrees, in the performance of this contract, to require all employees to comply with the instructions pertaining to conduct and building regulations, issued by duly appointed officials, such as the building inspectors, manager, etc.

3. Contractor shall, at its cost and expense, maintain during the term of this agreement, amounts of insurance that are deemed mutually adequate by the contracting parties.

4. The contractor shall, during the term of this agreement, comply with all pertinent federal, state and local ordinances and regulations.

5. The contractor shall be available for periodic inspections of the site at request of the contractee.

6. The contractor shall have a competent foreman in charge of the working crew at all times, and shall provide a monthly statement of services rendered.

C. Period of Contract and Payments:

1. This contract shall cover ___*(length of time)*___, commencing on ___*(date)*___ and ending on *(date)*. The contractee agent and/or the contractor can terminate this agreement for just cause after a 30-day notification period.

2. Payments to contractor shall be made in equal *(frequency of payment–monthly, etc.)* installments beginning on ___*(date)*___.

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BID SUMMARY

Operation	Bid Per Service	Bid Per Contract Period
I. Basic Maintenance Specifications		
A. Mowing and Trimming	$_____	$_____
B. Edging	$_____	$_____
C. Leaf Collection	$_____	$_____
D. Fertilization	$_____	$_____
E. Liming	$_____	$_____
F. Herbicide Applications:		
Preemergence (Item 1)	$_____	$_____
Broadleaf (Item 2)	$_____	$_____
Non-selective (Item 3)	$_____	$_____
Basic Maintenance Total		**$_____**
II. Accessory Maintenance Specifications		
A. Fungicide Applications:		
Helminthosporium	$_____	$_____
Rhizoctonia Brown Patch	$_____	$_____
Dollar Spot	$_____	$_____
Fusarium Blight	$_____	$_____
Snow Mold	$_____	$_____
B. Insecticide Applications:		
White Grub	$_____	$_____
Chinch Bug	$_____	$_____
Cutworm, Armyworm, and Sod Webworm,	$_____	$_____
Billbug	$_____	$_____
C. Aerification	$_____	$_____
D. Dethatching	$_____	$_____
E. Overseeding (Per 1000 Sq. Ft.)		
Kentucky Bluegrass @ 1 lb.	$_____	$_____
Kentucky Bluegrass @ 2 lb.	$_____	$_____
Tall Fescue @ 3 lbs.	$_____	$_____
Tall Fescue @ 6 lbs.	$_____	$_____
Accessory Maintenance Total		**$_____**
Contract Total		**$_____**

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APPENDIX

Note 1: Table 1. Recommended mowing heights for various turfgrasses.

Turfgrass	Mowing Height (in inches)		
Kentucky bluegrass	1-1/2	to	2-1/2
Tall fescue	2	to	2 ½
Creeping red fescue	2	to	2 ½
Bermudagrass	½	to	1
Zoysiagrass	¾	to	1

Reel mowers provide the highest quality of cut, but are the most expensive to maintain. Rotary mowers are most commonly utilized. Flail mowers generally provide a lower quality of cut than either reel or rotary mowers.

Note 2: (deleted)

Note 3: Choose either agricultural ground limestone or pelletized agricultural ground limestone, both of which are acceptable liming materials. Lime dust can be offensive if applied in windy conditions. Pelletized agricultural ground limestone does not produce as much dust but generally costs more than agricultural ground limestone.

Note 4: Choose either preventive or curative:

Preventive: implies an extensive spray program which could be necessary as frequently as every 7 to 10 days with fungicides, or every 25 to 30 days with insecticides.

Curative: implies spraying only when the disease or insect is active and threatens to seriously damage the turfgrass.

Note 5: In most situations it is desirable to not collect the cores. Aeration cores tend to reinoculate the thatch layer and promote thatch decomposition. Where traffic is excessive, additional aerification treatments may be prescribed.

Aeration is generally most beneficial on cool-season grasses when provided between August 15 and November in association with overseeding and fall fertilization. On warm-season grasses such as bermudagrass and zoysiagrass it is generally most beneficial during summer months from June 15 to August 15.

Note 6: Thatch control is best accomplished with a preventive program in which dethatching is done periodically to avoid excessive build-up. In the event that

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thatch has accumulated to an undesirable thickness, repeated dethatching at a light or moderate rate to avoid excessive damage to the turf is preferred.

Dethatching should be limited to the seasons in which grass is growing rapidly, and done in such a manner that the turf will recover in 2 weeks. The appropriate time period for cool-season turf dethatching is either between April 1 and June 1 or August 15 and October 15, depending upon geographic location.

In cooler regions of Virginia, May or August are appropriate, whereas in the hotter regions, April and September are more appropriate. Bermudagrass and zoysiagrass should be verticut early in the summer after these grasses have completely greened up and are vigorously growing.

ACKNOWLEDGEMENTS

The assistance of commercial lawn maintence professionals and citizens of Fairfax County was necessary for development of this publication. Suggestions from other lawn maintenance professionals and Extension Specialists have also been valuable in the development of these guidelines.

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Privately Owned Best Management Practice (BMP) "Wet Pond" Facilities:[26]

Rain happens... and the impact of developments on the natural drainage patterns is readily apparent. Vast, impervious surfaces dramatically increase stormwater runoff, which can result in downstream erosion, flooding and sedimentation. Developed lands also introduce "non-point source pollution" consisting of sediment, phosphorous and fertilizer nutrients, motor oils and petroleum derivatives, lawn and garden chemicals, trash and natural debris, and anything else washed from the developed areas and streets into local streams. A variety of laws, including the Virginia Chesapeake Bay Preservation Act, the Virginia Stormwater Management Act, and the federal Clean Water Act encourage or require control of this non-point source pollution. An important tool of stormwater management is the retention basin or "wet pond." Generally known as "BMPs," these dual-purpose structures (along with other BMP types) have become commonplace throughout Northern Virginia.

Retention Basins (or wet ponds) are excavated basins and natural valleys or depressions with a constructed impoundment dam that retains a permanent pool of water much like a lake or natural pond. This impoundment temporarily stores storm water above the elevation of the permanent pool allowing sediment and pollutants carried by the runoff to settle to the bottom. The storm water is released through a restrictive or controlled outlet structure and returned to the natural drainage channel at a slow rate to prevent downstream flooding and erosion. These facilities also improve water quality by reducing the non-point source pollutants, which helps to protect downstream water supplies and aquatic life. Wet ponds have an emergency (overflow) spillway, usually at one side of the impoundment dam, to release stormwater that exceeds the designed storage capacity of the pond. Without this overflow control, impounded runoff from an intense storm event could overflow the earth impoundment dam, causing erosion, damage to the outlet structure, or cracking and/or failure of the impoundment dam.

The County Department of Public Works and Environmental Services (DPWES) is responsible for maintaining all "dry ponds" (similar to wet ponds but without a permanent pool) in the County, therefore, further discussion of this BMP type is not warranted. However, except for very large BMPs classified as "regional basins," DPWES does not maintain wet ponds. Current County policy requires that wet ponds, if built to serve residential developments, must be constructed on community association common land and are the financial, legal and maintenance responsibility of the association. Regardless of how well designed and constructed, BMPs will not continue to provide temporary stormwater storage and water quality improvement if not properly maintained.

When the storage capacity or outlet release rate of a BMP is reduced by lack of maintenance, overflow through the emergency spillway and/or downstream flooding are visible evidence of the problem. If, however, the facility is not removing sediment and pollutants, there may be no obvious indicators. A consistent maintenance program is the best way to ensure that a

[26] Maintaining BMPs - A Guidebook for Private Owners and Operators in Northern Virginia, pub. by Northern Virginia Planning District Commission in cooperation with the U.S. Environmental Protection Agency and the Virginia Department of Conservation and Recreation, Fairfax, VA, February 2000.

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BMP continues both functions as designed. General maintenance tasks can be outlined, but the actual needs and frequency vary according to specific site conditions and the following elements:

- Visibility and Appearance of the BMP The needs and preferences of the adjacent residents affect the type and amount of "aesthetic" maintenance.

- Landscaping While the needs and care of landscape materials and groundcover vary widely, the health of grasses and other filtering vegetation surrounding a BMP is critical.

- Upstream Conditions The conditions and type of land use upstream from a BMP facility will largely determine the amount of sediment and pollutants that the facility must intercept and manage. Routine observation and reporting of erosion or other sediment-causing land disturbances can reduce the impact on a downstream BMP.

- Safety A maintenance program must ensure the safety of anyone carrying out maintenance tasks. Some work can be done by non-technical staff or resident volunteers, (i.e., trash and debris cleanup along the BMP shoreline), however, trained and insured professionals should be contracted whenever the work is within the pond, poses a safety hazard, or requires specialized equipment/experience.

- Professional Judgment Some problems may not be obvious to an untrained eye, and the judgment of a professional should be consulted to ensure that all maintenance needs of a BMP facility are considered and met.

- Maintenance Financing A reserve fund should be established to provide for the costs of long-term maintenance needs such as sediment removal, which can be considerable depending upon the size of the BMP and other factors.

Routine Maintenance Needs:

Inspections - Virginia's Stormwater Management Regulations require twice-yearly inspections, and after any storm event that exceeds the capacity of a BMP, to ensure that the facility remains operational to the designed capacity. Although a particular schedule for inspections is not required, one of the annual inspections should be by a qualified, knowledgeable professional. Wet ponds have several maintenance concerns, and the use of an inspection checklist is advisable. As a minimum, a BMP pond inspection should include the following items:

- inlets/outlets for obstructions by trash and/or natural debris;

- embankments and drainage channels for excessive erosion, or sedimentation in the pond and the stream bed below the outlet structure;
- the impoundment dam for cracking, settling or erosion, and for deterioration and erosion around the outlet structure;

- low spots in the bottom of an extended detention facility (dry pond);

- deterioration and or clogging (soil or vegetation) of outlet pipes;
- condition of the emergency spillway, including erosion or soil sloughing, excessively tall or no grass cover, growth of woody plants and trees;
- stability of side slopes, and upstream and downstream channel conditions;
- signs of vandalism, trash or yard waste dumping, or other obvious problems.

Vegetation Maintenance - Grass is usually established on the banks and slopes around both types of pond basins and in the bottom of dry ponds. Grass minimizes or prevents soil erosion, and it filters sediment from runoff before it enters the pond. Grass may be hardiest if maintained as an upland meadow no shorter than 6" – 8". Some communities prefer a more manicured appearance. Regardless of the aesthetic desires, mowing and fertilizer requirements must be tailored to the specific needs and conditions of each BMP site to maintain grass in good health and condition. Generally, the shorter and more manicured the grass is kept, the greater the mowing and fertilizing attention required, and the higher the cost. Over-fertilizing adds nutrient pollution to the pond water and should be avoided. Keeping the impoundment dam free of woody vegetation and trees is critical to the structural integrity of the dam. State and local safety standards exclude woody trees on structural dam embankments. They do not do well in the basins and make sediment removal more difficult and costly but on the non-critical banks and slopes such vegetation compliments the landscape aesthetics.

Debris and Litter Removal - Community clubs or volunteers can accomplish routine removal of natural debris, windfalls, trash and litter. Special attention should be given to removal of floating debris, which can clog an outlet culvert, riser or trash rack. Regular removal of debris, litter and trash from BMP basins maintains the pond functions and benefits the maintenance program by reducing the chance of clogging in outlet structures, trash racks, and other components of the facility. It also prevents damage to vegetated areas, improves the facility appearance, and reduces the conditions for excessive surface algae and/or mosquito breeding.

Mechanical Components Maintenance - Some BMPs have mechanical components that need routine attention to ensure continued performance; valves, sluice gates, pumps, fence gates, locks and access hatches should always be operational. An association's maintenance staff should be thoroughly knowledgeable on the functions, maintenance needs, and operation of these mechanical devices, and should prepare a schedule for inspection, testing and repairs or replacements.

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Insect Control - Mosquitoes may not be as big an issue as generally perceived. Because breeding conditions are created by stagnant water, there are acceptable ways to avoid the problem. The best control in wet ponds is to ensure that the permanent pool of water is exchanged with each storm and thus does not become stagnant. Regular removal of floating debris, particularly around outlet structures, facilitates exchange with fresh incoming stormwater, eliminates pockets of still surface water that can become stagnant, and washes insect larvae downstream. In larger basins and small lakes, it may be possible to add fish that feed on mosquito larvae.

Non-Routine Maintenance - An important non-routine wet pond maintenance factor is a healthy aquatic environment that requires regular monitoring but very little in the way of actual maintenance. A frequent problem is excessive algae growth in the permanent pool and is evidence of over-fertilizing upstream and/or on the banks and slopes of the pond itself. Fertilization schedules, rates, and procedures, should be carefully reviewed to assure only the minimum necessary fertilizer application for healthy vegetation. Desirable aquatic and semi-aquatic vegetation in and around the permanent pool will cause excess nutrients to be taken up and will greatly reduce the amount of algae in the pond. Consultation with a professional aquatic biologist will result in better pond function and appearance with less maintenance cost.

Bank Stabilization - The integrity of the banks and bottom of BMP ponds is very important and the associated routine maintenance program should aim at keeping a healthy vegetative ground cover on these areas. Exposed bare soil or poor quality ground cover can be quickly eroded by rainfall and overland runoff and the resulting sediment will wash directly into the basin, clogging the outlet structure and increasing the frequency of costly sediment removal. Although collection of sediment is one of the primary functions of wet and dry ponds, prevention of sediment at its source by maintaining a healthy grass cover is the lowest-cost primary goal. Trees, woody shrubs and understory growth can destabilize embankment areas by overshading and preventing healthy growth of protective grass cover. Maintenance personnel must be biologically and horticulturally experienced to achieve and maintain proper aquatic and vegetative environments in and around BMP ponds. Animal burrows can also deteriorate the integrity of pond embankments. Muskrat and beaver tunnels can start erosion, undermine trees, and collapse embankments. Environmental, wildlife and conservation specialists can be helpful in controlling excessive animal burrowing while protecting desirable wildlife habitats.

Sediment Removal - Since one of the purposes of BMPs is the removal of sediment from stormwater runoff, the accumulation eventually needs to be removed. Because BMP facilities vary dramatically in size, depth, upstream conditions, and many other factors, there are no “rules of thumb” covering the frequency of sediment removal. For planning and budgeting purposes, sediment removal should be considered at 5 to 15 year intervals for wet ponds. Sediment removal is the largest single cost of maintaining a BMP, and

this varies enormously due to the amount of sediment, whether it is wet or dry, and disposal requirements. An on-site disposal area outside of the floodplain has the least transportation factor and no dumping or "tipping fee." After spreading, drying and regrading, the sediment area can be seeded and stabilized with grass and/or wild flowers.

Wet sediment is more difficult and expensive to remove and dispose of than dry sediment. If the facility can be entirely drained and allowed to dry, heavy equipment can more easily remove the sediment with minimum time, involvement and cost. In other cases, hydraulic dredging or other methods may be required. Wet sediment is not allowed in many landfills and must be dried or "dewatered" prior to disposal. This additional step requires a place where the wet material can be temporarily spread out to dry. Immediately after sediment removal, cleaning of the outlet structure, and all other operations within the pond, the disturbed banks and slopes must be stabilized and vegetated to retard new sedimentation of the pond.

Infiltration trenches, another but seldom used type of BMP, become clogged with sediment more quickly than do ponds, and two to four inspections per year are recommended. Most trenches have grass or other filter and/or sediment traps to remove much sediment before it enters the trench storage. Keeping the sediment filter clean is essential to long-life operation of the trench. Although required more often than for wet ponds, the costs are significantly less. If a trench regularly overflows and remains filled with water after a storm, the aggregate stone must be excavated and the facility rebuilt. The advice of an experienced maintenance engineer is suggested.

Maintenance Cost Estimating - The maintenance needs of BMPs are site and facility-specific, and the costs will vary accordingly. Maintenance needs such as regular field observation and erosion/sedimentation reporting, debris and trash removal, mowing, and landscape plant maintenance can be safely and cost-effectively done by residents or the association's maintenance staff. It is usually worth the cost to contract with professionals to do the more difficult, time-consuming work. Safety, cost and effectiveness need to be balanced and cost estimates prepared using general BMP maintenance parameters to plan for these requirements and their financial impact on the association's budget. Routine and non-routine costs should be estimated and evaluated separately, since they can vary considerably.

Routine maintenance includes inspections, debris and litter control, mechanical components maintenance, landscape vegetation management, and other regular tasks required by the specific BMP facility. A survey of ten Washington Metropolitan area lawn and grounds maintenance services estimated routine maintenance costs between $100 per acre per year for mowing and fertilizing only, to $500 per acre per year for mowing, fertilizing, litter control, sodding, and insect control. Because labor is usually the largest single cost factor for grounds work, volunteers from the community can make a big difference, however, the association cannot ignore safety and liability considerations when volunteers are involved.

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Non-routine maintenance of BMPs according to the type, size and depth of the facility, the volume of sediment to be removed, its wet or dry condition, the equipment and method required for removal. On-site disposal of excavated sediment, equipment accessibility to the BMP, repair and/or replacement of outlet structures, and any repair of the emergency spillway are additional cost considerations.

The type of equipment and work to be performed, size of the facility, and the personnel required to excavate and remove sediment from a BMP have a significant impact on the cost of mobilization and demobilization (getting the operation on and off site). For small wet ponds that can be drained and excavated or dredged from the shore and extended dry ponds, a land-based perimeter operation will usually suffice. Typical mobilization/demobilization costs for this simple type of removal operation range from $3,000 to $5,000 for a one-acre pond. Wet pond basins too large to be excavated or dredged from the shoreline often require a crane and bucket or a hydraulic excavator to be mounted on a floating barge. The mobilization/demobilization cost for this type of operation can be up to $10,000 in the Washington Metropolitan region.

Dredging - The approximate cost of dredging and removing sediment from a BMP is proportional to the total volume (in cubic yards) to be removed, and is usually calculated by the following formula:

$$V = A \times \frac{43{,}560 \times D}{27}$$

where: V = volume in cubic yards;

A = area (in acres) of sediment surface, (not water surface);

D = thickness (in feet) of sediment to be removed,
(43,560 sq. ft. per acre; 27 cu. ft. per cu. yd.)

The thickness of sediment to be removed may be difficult to measure because the sediment surface is not usually visible and the depth varies with the shape of the pond bottom. It may be more practical to apply a uniform thickness of 6, 12, or 18 inches to be dredged without concern about the original bottom elevation and contour. A cubic yard is the standard unit of measure for dredging, and to which contractors apply a unit cost to arrive at a bid price for the proposed work. The unit cost for dredging ranges from $6 to $15 per cubic yard and is largely influenced by: 1) mobilization and type of equipment needed; 2) the depth of water above the sediment surface, 3) site restrictions; 4) the hauling distance to the “staging area” where the sediment is transferred to trucks; and other factors such as labor, workload schedule, and seasonal conditions.

Disposal - The primary determinant of sediment disposal costs is whether an on-site disposal or “spoil” area is available. Total disposal costs must include such factors as

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total material volume, number of trucks to be used, transportation distance, whether the material must be spread and dried before final disposal, and any "tipping" fees at a landfill site. In 1999, the Northern Virginia Planning District Commission estimated typical disposal costs of $47 per cubic yard ($37 for dumping, $10 for transportation, depending upon the above factors).

Planning Ahead – A Financial Reserve - The cost of maintaining a BMP wet pond retention basin that requires dredging and other non-routine maintenance can be considerable. The cost estimates for mobilization, dredging and disposal plus other specific repairs (i.e., outlet structure repairs, mechanical replacements, etc.) will establish a reasonable cost range for non-routine maintenance of a BMP. A reserve fund to lessen the financial impact of this non-routine maintenance reality is recommended. Approximately 6% to 20% of the anticipated costs should be accrued each year as part of the annual assessment.

Maintaining Your BMP, a comprehensive and detailed guidebook for private owners and operators of BMPs, published by the Northern Virginia Planning District Commission, Division of Environmental Services, is available in its entirety online at http://www.novaregion.org/pdf/Maintaining_BMPs.pdf. The following charts from this guidebook show the range of costs associated with sediment removal for various sized BMPs based on a survey in the Washington Metropolitan area. The last column (blank) can be used to estimate the maintenance costs of an association's BMP pond.

Sample Self Inspection Checklist

STRUCTURAL INTEGRITY

Yes No N/A
Does the facility show signs of settling, cracking, bulging, misalignment, or other structural deterioration?

Yes No N/A
Do embankments, emergency spillways, side slopes, or inlet/outlet structures show signs of excessive erosion?

Yes No N/A
Is the outlet pipe damaged or otherwise not functioning properly?

Yes No N/A
Do impoundment and inlet areas show erosion, low spots, or lack of stabilization?

Yes No N/A
Are trees or saplings present on the embankment?

Yes No N/A
Are animal burrows present?

Yes No N/A
Are contributing areas unstabilized with evidence of erosion?

Yes No N/A
Do grassed areas require mowing and/ or are clippings building up?

WORKING CONDITIONS

Yes No N/A
Does the depth of sediment or other factors suggest a loss of storage volume?

Yes No N/A
Is there standing water in inappropriate areas?

Yes No N/A
Is there an accumulation of floating debris and/or trash?

OTHER INSPECTION ITEMS

Yes No N/A
Is there evidence of encroachments or improper use of impounded areas?

Yes No N/A
Are there signs of vandalism?

Yes No N/A
Do the fence, gate, lock, or other safety devices need repair?

Yes No N/A
Is there excessive algae growth, or has one type of vegetation taken over the facility?

Yes No N/A
Is there evidence of oil, grease, or other automotive fluids entering and clogging the facility?

Yes No N/A
In rain garden BMPs, is there evidence of soil erosion, does mulch cover the entire area, are specified number and types of plants still in place, or is there evidence of disease or plant stress from inadequate or too much watering?

OTHER OBSERVATIONS

_____

_____

_____

_____

_____

_____

A yes answer to any of these items should result in corrective action or a call to a professional inspector.

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Sample Wet and Dry Pond Sediment Removal Costs

Component	Surface Area .25 acre Low ⇩	Surface Area .25 acre High ⇩	Surface Area 1 acre Low ⇩	Surface Area 1 acre High ⇩	Surface Area 2 acres Low ⇩	Surface Area 2 acres High ⇩	Surface Area 10 acres Low ⇩	Surface Area 10 acres High ⇩	Work Space _____ acres Low ⇩	Work Space _____ acres High ⇩
Mobilization/ Demobilization/ Access Road	$1000	$2000	$3000	$5000	$5000	$7000	$5000	$10000		
Dredging*	$1613 ($8/cy)	$3025 ($15/cy)	$12090 ($15/cy)	$16120 ($20/cy)	$24195 ($15/cy)	$32260 ($20/cy)	$120990 ($15/cy)	$161320 ($20/cy)		
Disposal (Onsite/Offsite)	$1008 ($5/cy)	$9478 ($47/cy)	$4030 ($5/cy)	$37882 ($47/cy)	$8065 ($5/cy)	$78811 ($47/cy)	$40330 ($5/cy)	$379102 ($47/cy)		
Total Cost	$3612 to $15003		$19120 to $59002		$37260 to $118071		$166320 to $550422			
Typical Equipment	Backhoe		Truck Equipment (1) Loader/Dozer (2) Crane Dragline or Clambucket							

*Dredging calculations assume a sediment accumulation of 6 inches. Costs w ill vary according to sediment depth. Estimated costs also assume that the facility is drained and that the silt is dewatered in place

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What Can You Do To Hold Down BMP Maintenance Costs?

Properly cared for, a BMP can work effectively for years without major maintenance costs. Abused, it can potentially be a continual financial drain. Businesses and homeowners associations can minimize costs and the potential liability of those responsible for BMP maintenance by promoting the following simple rules.

DO NOT!

- ☒ Dump used motor oil, antifreeze, or other oil and grease into storm inlets. This is a criminal offense.
- ☒ Dump grass clippings, leaves, soil, or trash of any kind into a BMP or a storm inlet. Leaves and grass clippings release bacteria, oxygen consuming materials, and nutrients. They will also clog BMP components.
- ☒ Dispose of pet wastes in the storm system – including grassy areas near a BMP. Animal wastes contain disease causing bacteria and release oxygen consuming materials.
- ☒ Wash dirty vehicles on streets or driveways. Whatever comes off the car ends up in the BMP.
- ☒ Overfertilize the lawn. Whatever washes off the lawn or impervious areas (such as driveways or sidewalks) drains into the BMP and shortens its life-span.
- ☒ Leave bare areas unstabilized. Erosion from bare soil results in sediments that can clog a BMP.
- ☒ Dispose of left over paint or hazardous materials into the storm drain. These materials can kill BMP vegetation and aquatic life. Dumping is also a criminal offense.

DO!

- ☑ Keep properties, streets, and gutters free of trash, debris, and lawn clippings.
- ☑ Provide information to those who maintain their own automobiles on where to recycle oil and antifreeze.
- ☑ Encourage residents to take dirty vehicles to a commercial carwash or select a location where water does not enter a storm drain.
- ☑ Put a pan underneath your car if it is leaking to catch the fluids until it is repaired. Spread an absorbent such as cat litter to soak up drippings and dispose of properly.
- ☑ Educate residents on where to properly dispose of hazardous wastes, including oil and latex paints.
- ☑ Plan lawn care to minimize the use of chemicals and pesticides. Sweep paved surfaces and put the sweepings back on the lawn.
- ☑ Limit the amount of impervious surfaces. For patios, walkways, and landscaping, consider porous pavements such as bricks, interlocking blocks, or gravel.
- ☑ Incorporate native trees, shrubs, and groundcovers to help the water soak into the ground. Select species that need little fertilizer or pest control and are adapted to specific site conditions.
- ☑ Sweep up and dispose of ice melting chemical residues in the winter. This will protect grass and other landscaping plants.

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BMP Resource Guide

LOCAL GOVERNMENT AGENCIES

Information on maintenance agreements and responsibilities.

Arlington County: Water, Sewers, and Streets Division ..... (703) 228-6485
City of Alexandria: Transportation and Environmental Services ..... (703) 838-4327
Town of Dumfries: Public Works ..... (703) 221-3400
Fauquier County: Community Development ..... (540) 347-8660
Town of Leesburg: Engineering and Public Works ..... (703) 771-2790
Fairfax County: Maintenance and Stormwater Management Division
Engineering Office ..... (703) 934-2860
Public Works ..... (703) 934-2800
City of Fairfax: Public Works, Stormwater Supervisor ..... (703) 385-7980
City of Falls Church: Public Works ..... (703) 248-5080
Town of Herndon: Public Works ..... (703) 435-6853
Loudoun County: Building and Development ..... (703) 777-0397
City of Manassas: Public Works ..... (703) 257-8378
City of Manassas Park ..... (703) 335-8820
Prince William County: Environmental Services ..... (703) 792-7070
Town of Vienna: Public Works ..... (703) 255-6381

SOIL AND WATER CONSERVATION DISTRICTS

Information on erosion and sediment control.

John Marshall SWCD (Fauquier County) ..... (540) 347-3120
Loudoun SWCD ..... (703) 771-8395
Northern Virginia SWCD (Fairfax County) ..... (703) 324-1460
Prince William SWCD ..... (703) 594-3621

VIRGINIA COOPERATIVE EXTENSION

Information on vegetation and landscape management.

Arlington County ..... (703) 228-6400
City of Alexandria ..... (703) 519-3325
Fairfax County ..... (703) 324-8556
Fauquier County ..... (540) 341-7950
Loudoun County ..... (703) 777-0373
Prince William County ..... (703) 792-6289

ADDITIONAL PUBLICATIONS

Planting and Preserving Trees in and around Stormwater Management Ponds (Fairfax County DPWES) ..... (703) 934-2860
How Does Your Garden Grow? A Reference Guide to Enhancing Your Rain Garden (Prince George's County, Maryland) ..... (301) 883-5935
Management of Virginia's Ponds for Fishing (Virginia Department of Game and Inland Fisheries) ..... (804) 367-1000
Simple Things You Can Do to Clean Up Our Urban Streams and the Chesapeake Bay (NVPDC) ..... (703) 642-0700
You and Your Land (NVSWCD) ..... (703) 324-1460

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Soil and Water Conservation Problems:

Many associations have common areas that include lakes, ponds, streams, dams and/or grounds that are subject to soil and water conservation problems. The Northern Virginia Soil and Water Conservation District (NVSWCD) in cooperation with the Virginia Cooperative Extension Service, the USDA Natural Resource Conservation Service, and the Virginia Division of Forestry assists community associations in identifying conservation problems. NVSWCD provides technical assistance in planning implementation programs to correct soil erosion and water problems and to improve grounds for recreation use. It assists associations in determining whether their members qualify to establish a Watershed Improvement District (WID). The potential advantage of a WID is that the costs of improving and maintaining qualifying common property can be assessed to association members by a real estate surtax that qualifies as both a federal and state income tax deduction instead of an association maintenance fee that is not tax deductible.

The NVSWCD sells plants and tree seedlings to associations that demonstrate a need for the materials to promote soil and water conservation. Normally, NVSWCD works with an association to establish its needs for plant materials and to develop a planting plan. The materials are ordered in the winter and delivered for planting in the spring. Each spring, in conjunction with the Fairfax County Park Authority, the Izaac Walton League of America, and the USDA Natural Resources Conservation Service, the NVSWCD sponsors a fish pond management seminar to assist associations that own and manage fish ponds. For information about their services, contact NVSWCD at http://www.fairfaxcounty.gov/nvswcd/default.htm or at (703) 324-1460.

Snow Removal:

Associations must provide snow removal for their private streets and parking areas. Historical records show that Fairfax County has had an average of five snow falls of more than one inch each winter, including one in December, two in January, one in February and one in March. Budgeting for snow removal can be a problem because snow removal costs can be significantly affected if the number of snow falls deviates from this norm, if the snowfalls are unusually deep, or if the weather conditions accompanying the snow require extensive sanding or salting of the streets. Snow removal companies are listed in the Yellow Pages of the telephone directory, and snow removal services are also offered by refuse collection firms, construction companies, etc., that have equipment convertible for use as snow plows. There are three basic types of contract arrangements used for snow removal services in this area:

- Flat fee or "insurance" contracts - A flat fee is charged for all snow removal for an entire season. If there are more snowfalls than usual, the association "wins;" with few snowfalls the contractor "wins." While this provides a set figure for snow removal expenses, in unusually severe winters the contractor may find it is unable to provide the services at the

contracted price. This may leave the association with unplowed streets, ensuing legal expenses, and/or having to arrange for alternate plowing sources after each snowfall.

- Hourly contracts – An association is guaranteed that its streets will be plowed automatically after 2 or more inches of snow have fallen. The association is billed at an hourly rate established in the contract (a two hour minimum billing is often required).

- Retainer contracts – The association pays a flat fee based on estimated costs against which snow removal services are charged as they are performed. Services rendered above this amount are separately billed.

When contracting for snow removal services, the contracting procedures discussed in Chapter 3 should be followed. An experienced snow removal contractor can usually provide an association with an accurate estimate of the cost of snow removal per snowfall based on the type of terrain, the size of the area to be cleared and the depth of snow usually accumulated. It is helpful to the contractor, particularly if the community has a parking lot, for the association to submit a sketch of the development indicating where it wants or does not want snow piled. The association should also provide the contractor with the names and telephone numbers of association representatives to contact if an emergency or problem arises.

Sanding and Salting - The advisability of applying salt, sand, or a sand/salt combination to streets to provide traction and melt ice is controversial. Such materials, although effective, are expensive and salt can prove damaging to asphalt and vegetation near the edges of the pavement. Sand provides traction but has no melting capability, and once applied it must be swept or otherwise removed in spring. A sand/salt combination is often recommended as being more efficient than sand and less destructive than salt. Sometimes a sodium chloride/calcium chloride salt mixture is used with sand as this is thought to be less destructive to pavements. Safety, however, must be an association's primary concern. Some associations have hills or areas which become hazardous and always require sanding or salting. Other associations determine whether sanding or salting is necessary on an occurrence basis (e.g., presence of ice, likelihood of rapid melting, etc.)

Clearing Walkways - Not all snow removal firms clear sidewalks. As an alternative, an association can hire local youths or use its maintenance personnel to remove snow from sidewalks for which the association is responsible. One snow removal contractor suggested that associations use urea (a nitrogen compound used for lawn fertilization) on icy sidewalks rather than salt or sand. Although expensive, urea provides traction, is a good melting agent and has the added advantage of being beneficial to the grass and shrubs along the walkway.

Streets and Paved Areas:

Pavement maintenance and repairs of private roads, parking areas, and sidewalks of an association are usually a major expenditure because the size of areas, type of materials and equipment needed, and frequency of routine maintenance requires professional expertise. The life span of the streets and other paved areas depends upon the initial construction, drainage, annual climatic factors, and the type and amount of use. Most public streets in Fairfax County are owned and maintained by the Virginia Department of Transportation (VDOT). Fairfax County provides maintenance to a very limited number of public roads on an interim basis until they are upgraded and accepted into the VDOT State Secondary System for maintenance. VDOT does not maintain subdivision streets unless they have been constructed according to VDOT standards and are dedicated to public use, and are accepted into the VDOT systems of roads. County tax funds are not used for VDOT public road and street maintenance; most state road maintenance is funded from the state's gasoline tax. Small four digit rectangular signs posted at corners readily identify state roads. For information regarding maintenance of public streets, contact VDOT at (703) 383-8368 or at http://virginiadot.org/quick/nova_quick.asp.

In some communities, some or all of the streets, including the road pavement, curbs and gutters, and sidewalks are privately owned and maintained by the association. Since the early 1960s, Fairfax County has required that private residential streets be designed and built according to minimum standards to assure that they are adequate to serve the community for which they are designed. The County requires developers and builders to post a bond with the County, which guarantees the installation of a development's streets and other public improvements in accordance with County standards. County standards for street construction are based on a formula that estimates the average traffic the street will carry. The formula assumes an average daily traffic flow of five to seven vehicles trips per residence, and includes provisions for increased traffic due to the location of schools, parks, fire facilities, commercial development, etc. It assumes that heavy commercial trucks (i.e., two axles and six tires or heavier) will be 5% or less of the total daily traffic.

Life Span of Paved Areas - The life span of an association's streets will depend upon the quality of construction and the degree of maintenance they receive. A properly constructed and maintained street should last at least 20 years before major reconstruction is required. Street durability may be affected if construction occurs in other sections of the subdivision serviced by a street or if the number of trucks exceeds the 5% estimate. If traffic remains within the limits for which the street is designed, the need for major maintenance expenditures such as for resurfacing should not be necessary for the first 8-10 years. However, all paved surfaces require routine maintenance. Changes in temperature, moisture, freezing and thawing, as well as normal traffic will cause cracks, holes and general deterioration of the surface of streets, parking areas, and walkways.

Pavement Maintenance & Surface Treatments - Pavement maintenance usually consists of i) periodic surface treatments to replace asphalt worn away by traffic and weather, and ii) timely repair of surface defects, cracks and small pot holes to prevent major failures.

Regular inspection of the pavement is essential to detect problems. Sealing and resurfacing are the two main types of surface treatment for asphalt pavements. Sealing refers to a thin layer of asphalt or other emulsion spread on the pavement surface to prevent the absorption of moisture into the road surface and to improve its appearance. Some sealing compounds prevent the surface from being softened by oil and gas from vehicles. The two most common types of seal used in this area are:

- Seal coat or fog seal - a thin layer of an asphalt emulsion or coal tar emulsion and water applied to the surface at a rate of 0.1 to 0.2 gallons per square yard. It is the least expensive surface treatment and normally lasts two years before deterioration by weather and traffic.

- Slurry seal – a mixture of an asphalt emulsion, fine aggregate such as a fly ash or mineral filler, and water. It is more expensive than a seal coat, but lasts an average of 4-5 years. A contract for slurry seal should specify compliance with VDOT specifications.

Some engineers feel that surface sealing, especially with a slurry seal, postpones the need for resurfacing by preventing the penetration of moisture into the surface. Others feel that it is more economical to resurface a pavement when moisture penetration and cracking occur. Resurfacing refers to a new (1" minimum) hot-mix bituminous concrete asphalt surface ("SM-5" VDOT specification) applied over a properly patched and prepared existing pavement. An asphalt course of less than one inch thickness tends to dry out and deteriorate more rapidly, and may not fill or cover previous ruts, depressions and/or pot holes. Repeated applications raise the level of the street, which affects the drainage rate, and manholes, curb inlets, and other structures might need to be raised. Alternatively, the old and cracked surface can be "milled" (removed) to restore the original elevation upon the addition of the new surface course. Milling is an additional expense but may be less than the cost of raising manholes, curb inlets, and other structures. Sometimes a bituminous "tack coat" must be sprayed on the old surface to improve bonding of the new asphalt. The new, durable, smooth surface should last 8-10 years. An association should consider several professional opinions and compare cost estimates before contracting for a specific application.

Repairing Pavement Defects - The most common types of pavement defects are cracking, surface raveling, and potholes. Cracking includes:

- Alligator cracks – Alligator cracks form a pattern similar to that of alligator skin, and generally indicate poor drainage of ground water in the earth sub-base.

- Edge cracks – Edge cracks appear along and parallel to the edge of the pavement surface, indicating settlement or shifting of base material under the cracked areas, generally due to insufficient compaction.

- Shrinkage cracks – Shrinkage cracks are often caused by asphalt or bituminous material that does not "give" with temperature changes. Shrinkage cracks less than 1/8 inch will often knead together from traffic use, otherwise a sealer can be applied to fill the cracks. Wider cracks can be cleaned of loose material with an air jet nozzle, then filled with a rubber or polymer sealant to seal the crack. Lay persons or maintenance staff can perform this repair using products commonly available from building supply firms.

- Joint cracks – Joint cracks occur at a point where two sections of paving material meet, and are most often caused by moisture seeping into the joint, preventing proper bonding of two sections of pavement materials.

- Root cracks – typically in a random, branching pattern, occur when the roots of nearby trees grow under the pavement. As the roots grow in diameter, they create great upward pressure cracking the asphalt, often raising it above the adjacent surface.

Temporary or permanent patching can treat cracks. Temporary patching does not correct the cause but will prevent further deterioration due to water seeping into the crack. It involves applying and compacting a "skin" patch of asphalt material to the cleaned surface area around the crack. Permanent patching entails cutting out the cracked area, removing loose materials, improving the drainage (if necessary), and refilling and compacting the damaged area with fresh asphalt. A raveled surface is a separation of the aggregates, generally caused by inadequate initial compaction, improper asphalt mix, or inadequate temperatures during construction. If in an early stage of raveling, a seal coat may prevent further raveling. Advanced raveling requires a slurry seal application. Competent professional advice is the best first step. Potholes indicate a weakness in the pavement from poor sub-drainage, inadequate compaction of the base material, and/or an improper asphalt mix. Potholes can be temporarily repaired by removing loose materials and filling the hole with premixed patching material. New base and high-quality hot-mix material provides the most permanent and cost effective repair.

Pavement and Traffic Line Marking: - Road and street maintenance also includes painting lines for parking spaces, cross walks, fire lanes, and center and edge striping. The frequency with which this needs to be done varies with the amount of traffic, the quality of the asphalt surface, and the quality of the paint used. Traffic paints generally last between three and five years. The cost of pavement marking is based on the size of the job and the types of marking desired. The painting of new lines is more expensive than painting over existing lines. An association should know whether preparation costs for sweeping and/or hosing the surface are included in the cost estimate or separately charged. The paint used should meet federal specifications for traffic paints.

Sidewalks, Curbs, Gutters - Sidewalks, curbs and gutters are normally concrete, and if properly constructed with a good foundation, may last 50 years. The life expectancy of

concrete depends on many variables, including the weather conditions during construction, the sub-base grading, base materials used, the type and strength of concrete used, finished surface drainage, and any excessive loading and damage from heavy equipment and vehicles such as dump trucks and moving vans. Concrete is subject to three common problems – cracking, upheaving and spalling. Cracking and upheaving are usually caused by inadequate drainage under the base – the water freezes, expands, and heaves the concrete upward. Spalling is a deterioration of the concrete surface due to poor surface finishing when constructed and/or subsequent salting on the concrete to remove snow and ice. The cost to remove and replace damaged concrete depends on the size of the job, the time of year the work is performed, correcting any sub-base drainage problems, and other physical conditions at the site. The advice of a professional engineer should be sought for the causes of concrete failure or damage. The contractor should guarantee the materials and workmanship of the repair work for at least the four (weather/exposure) seasons of a full year.

Maintenance Planning & Reserves - Some associations set aside reserves based on the replacement cost of their paved areas divided by their life expectancies and use these funds for major maintenance projects as they become necessary. Other associations develop an annual and a multi-year pavement maintenance program. An annual program typically includes minor maintenance projects, which are often financed out of the yearly operating budget. A multi-year program typically includes a list of major maintenance projects, their anticipated costs and a schedule for when they are expected to be performed. A program approach to pavement maintenance enables an association to accumulate sufficient reserve funds to cover the cost of maintenance work by the time it is expected. In developing a pavement maintenance schedule, an association may set aside reserves for sealing asphalt surfaces and repainting pavement lines every 5 years, resurfacing asphalt streets every 10 years, major concrete work in 20-25 years, etc.

When planning for pavement maintenance, the inventory of paved areas (see "Project Inventory," Chapter 4) should note the age of each segment of sidewalk, paved surface, and street. In some developments, paved surfaces have been constructed at different times with different specifications and construction methods, and may require separate maintenance schedules due to the age difference or other problems that affect one section of pavement but not another. Whether or not an association performs pavement maintenance depends upon the amount and type of work to be done, the funds available for professional maintenance, and the availability of volunteer or employee manpower. The quality of both the surface and drainage construction will affect the frequency, severity and cost of pavement repair. A community experiencing severe problems with its pavement may want to contact a professional engineer to develop a long range pavement program. Pavement maintenance and repair costs are subject to many variables including: price fluctuations of the worldwide petroleum market, mobilization costs for equipment, labor, job size, seasonal weather, site preparation, and clean up/restoration of the area affected. Contractors are busiest during warm-weather months and may charge more or may not even consider small projects during this time of the year. Cold weather (below 50^0F) may cause problems, because asphalt must be hot to

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achieve proper "knitting" of the materials for a durable, long-lasting surface. A contractor should identify all conditions that affect the cost of the proposed work.

The following technical publications of the Asphalt Institute detail the design, construction, maintenance and repair of different applications and may help to clarify an engineer's or contractor's proposal for asphalt repairs.

- Asphalt Surface Treatments-Specifications – Contains explicit information on specifications for single and multiple surface treatments with asphalt. The book discusses general requirements, materials, construction, preparation of surfaces, equipment, sampling, testing methods, application of asphalt primer, mineral aggregate, asphalt binder, traffic control, safety, measurement and payment basis, and notes to the engineer. 8 pages - $6.00

- Asphalt Surface Treatments-Construction Techniques – This booklet details the construction procedures for asphalt surface treatments including: inspection of existing pavements, asphalt distributor, checking distributor speed, checking spreads, aggregate spreaders, rollers, power brooms, auxiliary equipment, pavement preparation, surface treatment design, spraying the asphalt, aggregate spreading, rolling, traffic control, multiple surface treatment, precautions, glossary, primes and road-oiling, distributor data. Fully illustrated; 28 pages - $10.00

- Asphalt Pavement for Athletics and Recreation – Describes and illustrate how Full-Depth asphalt construction provides smooth, all-weather pavements for a variety of athletic and recreational uses. Numerous photos; 16 pages - $6.00

A full catalog of publications is available from The Asphalt Institute, Lexington, KY by calling (859) 288-4960 or online at http://www.asphaltinstitute.org. Additional information about asphalt and concrete pavements is available from:

- The National Asphalt Pavement Association in Lanham, Md. at (301) 731-4748 or at http://www.hotmix.org/index2.html.

- The Virginia Department of Transportation in Fairfax, Virginia at (703)-383-8368 or at http://virginiadot.org/quick/nova_quick.asp;
- Virginia Asphalt Association, Inc. in Richmond, VA 23226 at (804) 288-3169

- The American Portland Cement Alliance in Washington, DC at (202) 408-9494);

- The Fairfax County Public Facilities Manual, in County Libraries, Fairfax, VA, or Maps & Publications Office, Fairfax County Govt. Center, Suite 127 at (703) 324-2974 or at http://www.fairfaxcounty.gov/dtcs/docserv/pubs_and_gifts.htm.

Swimming Pools:

Swimming pools operated by community associations are considered public pools by the County and must comply with the County's Swimming Pool Ordinance, Fairfax County Code, Chapter 69 (at: http://www.fairfaxcounty.gov/default.htm). This Code section is enforced by the County Health Department, Environmental Health Division (703) 246-2444 or at http://www.fairfaxcounty.gov/service/hd/ehdweb.htm. The ordinance contains comprehensive requirements regarding the operation and management of existing swimming pools, and design and construction requirements for pools constructed after May, 1978. The Health Department can order changes to pools that do not comply with these design and construction requirements when the Department feels the life, health, or safety of the users is jeopardized. The Health Department can also require repairs to any equipment or correction of any conditions it rates deficient during regular inspections of the pool during the swimming season. Each spring the Health Department sends a packet of information to pool owners, including community associations with a pool(s). This information outlines the steps required to obtain an operating license, and contains swimming pool operation guidelines to assist associations in complying with the ordinance. The ordinance requires:

- obtaining an annual license from the Fairfax County Health Department for the year-round indoor pool or a seasonal license for the outdoor pool which is required prior to the pool opening. The license will be issued only after an application form and payment of an annual fee of one hundred and fifty dollars ($150.00) are received, and satisfactory electrical and Health Department inspections are completed. Residential pools which existed prior to May 30, 1978 and which are now owned by an owners' association having fewer than twelve (12) families are exempt from requirements of the pool code. For association owned pools in the cities of Falls Church and Fairfax, there is no license fee, however, the annual or seasonal license must be obtained by application and satisfactory inspections.

- each pool must have a staff person on the premises who holds a valid pool operator's permit issued by the Health Department;

- safety and rescue equipment must be available, including a telephone with numbers for police, rescue services, and the fire department;
- at least one lifeguard must be on duty at all times, with additional lifeguards present when more than 75 persons are in the pool area;

- at least one person certified in cardiopulmonary resuscitation (CPR) must be on duty at all times. Certification in CPR shall be in accordance with the "Standards and Guidelines for CPR and Emergency Cardiac Care as Prescribed by the Journal of the American Medical Association" or equivalent program approved by the Director of Health Services.

- standards regarding clarity of the water, pH and alkalinity ranges;

- specific water treatment chemicals unless excepted by the Health Department;

- records of pool water test results must be kept for Health Department review, and must be posted in a location where readily observable by pool/spa users.

Pool Operating Expenses - Pool operating expenses depend upon the size of the pool, the hours of operation, length of season, and the scope of contracted management services. Most pools in the county are open for a 95-100 day season (from Memorial Day to Labor Day), while other pools open earlier and/or close later, often on a reduced schedule. Personnel costs are a significant portion of pool operating expenses. When budgeting pool expenses, an association must first decide the total hours of operation per season, and number of staff persons needed for the expected number of users during normal and peak use periods, multiplied by 120% of the average wage to account for normal employee expenses and overhead. Pool operating expenses also include preparation of the pool, deck and related facilities in the pool area for the swimming season (summarization), closing the pool and preparation for cold weather (winterization), and maintenance of the pool and bathhouse facilities during the swim season. Many associations contract with professional pool maintenance firms to perform some or all of the summarization and winterization tasks, including being present for the Health Department inspection. Pool operating expenses may also include:

- insurance;
- chemicals for treating pool water;
- utilities: electricity for motors and lights; water for the pool and bathhouse; gas/oil for heating pool and bathhouse water; telephone;
- supplies: cleaning and paper products, cleaning equipment, light bulbs, other supplies; and
- poolside furniture and equipment: funds for purchase and repair of chairs, tables, umbrellas, and other equipment;

Summerization - This essential annual service generally includes:

- removal of leaves, litter, and accumulated debris, and thorough vacuuming and cleaning of the pool. Draining and acid washing of the walls and bottom may be necessary. Only professionals should drain pools, taking care to properly discharge the water, particularly if it contains acid or other cleaning agents.
- flushing and recharging the fresh water system, and activating the chemical treatment equipment;
- servicing the pump motor and activating the filtering system;
- remounting and checking the safety of diving boards and other equipment;

- reinstalling skimmer baskets and cover plates;
- testing the water supply and filling the pool to the proper level;
- repairing and cleaning the bathhouse and pool area;
- arranging for electrical and Health Department inspections;
- arranging for Fire and Rescue Department inspection and certificate; and
- installing telephones, equipment, and ordering supplies.

Winterization - This essential annual service generally includes:

- lowering the water level to 12"-18" below normal water level, and treating the water with an algicide and stain prevention chemicals;
- backwashing, draining, and cleaning each filter, removing debris from strainers and skimmers, draining pipes, and shutting off the water supply;
- flushing, draining, and disconnecting chlorinators and hypochlorinators; and
- removing and storing diving boards, ladders, chairs, ropes, and equipment.

Pool Service Companies - Many associations use pool servicing companies to perform pool maintenance and repairs and provide pool personnel and management services. The association must decide the scope of services, what the association is responsible for, who will purchase/provide water treatment chemicals, household supplies, cleaning equipment (hoses, buckets), first-aid kits, etc.; who will arrange for and be present during electrical and health inspections; and who will clean and repair the bathhouse(s). The association must clarify whose personnel will provide swimming lessons, handle guest fees, catering and clean-up at special association parties or private functions. Contracting for pool management and maintenance services should follow the guidelines in Chapter 3 and factors that are particularly relevant to pool service contracts, such as:

- Pool contracts should be negotiated as early as possible (fall is best) to give both the contractor and the association adequate time to plan and to perform necessary maintenance during the off season. Does the contractor operate on a seasonal basis or year round and can he/they provide all the services the association needs? Make certain the contract requires the services to be provided, including enforcement of pool rules and the daily operating procedures to be followed.
- Make certain the contractor is properly licensed and insured for liability and property damage; assure that contracted services include compliance with all

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environmental and hazardous material regulations affecting and concerning pool chemicals.

- ensure that the contractor provides worker's compensation, pays social security, minimum wage, etc.; if the personnel assigned to your pool will meet County lifeguard and/or pool operator license requirements; if provisions are made for supervision of the pool staff, and who supervises them and how often.

- Make certain the contract contains provisions for emergency closing of the pool and a reimbursement clause in case of a long shutdown beyond control of the association.

Some associations manage their pool themselves to reduce operating costs, maintain control over pool staff, purchase chemicals and supplies, and contract only for essential maintenance that the association cannot provide. Before committing to self-management of its pool, the board of directors should look realistically at its liability risk and the cost of liability insurance versus the cost of contracting with a pool management company. Such companies can provide trained and insured lifeguards and pool staff, which may significantly reduce the association's general liability costs to more than compensate for the cost of the pool management contract. The Pool and Spa Operator's Handbook, a textbook for the Certified Pool Operator (CPO) course, is available for $25 from the National Swimming Pool Foundation in San Antonio, TX. At (210) 525-1227 or at http://www.nspf.com. Associations may find it valuable to train at least one member in a Certified Pool Operator (CPO) course. Such courses are sponsored jointly by the area health departments, the American Red Cross, and private swimming pool businesses. The Northern Virginia Community College (NOVA) offers this course at its Alexandria (703) 845-6200, Annandale (703) 323-3000, and Loudoun (703) 450-2500 campuses, and can be reached for additional information at http://www.nv.cc.va.us.

Pool Maintenance and Repairs - Proper maintenance of a pool and its equipment is essential to preserve life expectancy and to prevent premature repairs. However, deterioration is a normal process and repairs are inevitable; severe winter weather can cause structural damage, mechanical parts will need repair, and pool linings will need replacement after seasonal use and repeated acid cleanings. Pools vary as to the frequency and extent of repairs due to the quality of the construction; the adequacy of maintenance; the day-to-day operation and care of the pool; and the extent of deterioration caused by freezing and thawing. A pool 1-2 years old should be free from significant repairs; a 3-5 year old pool may need caulking and repairs to the tiles and edge coping; a 6-8 year old pool may require repair and replacement of some mechanical parts and deck materials; an 8-10 year old pool can expect to need a new interior surface. When major pool repairs are needed, an association should be careful to use detailed specifications for the work, as they can have a significant impact on the success and longevity of the repairs as well as the cost. If after 8-10 years the interior finish in the pool needs to be resurfaced, the cost will depend largely on the amount and type of surface preparation to be done – will the surface be removed from under the tiles and around lights and inlets, and what thickness will the new coating be?

One method of obtaining specifications for repairs is to hire a reputable pool builder or designer to evaluate your pool conditions, recommend necessary corrective work, and write specifications for this work, thus enabling the association to advertise for competitive bids based on the same specification. To find the names of reputable pool builders and service firms, contact the National Spa & Pool Institute at (703) 838-0083, ext. 156 or at http://www.nspi.org and request the NSPI Dealer Directory of members, who are properly licensed and subscribe to a code of professional ethics.

Swimming Pool Reserves - When formulating reserves for swimming pools, associations use different approaches. Some associations determine the amount for each year's reserves by using the replacement cost of the pool divided by its remaining useful life. These funds are then used to cover both anticipated and unexpected major repairs. Other associations determine the cost and life expectancy of the pool's major components and develop a replacement schedule for each component for a 20-25 year period. Funds can be set aside to cover re-plastering every 10-12 years, new mechanical equipment every 8-10 years, and major surface and deck repair every 6-8 years. The services of a professional may be required to accurately project the replacement time and costs of these components, as their life expectancy is often affected by the type and quality of the original equipment installed as well as the maintenance they have received. Severe weather can cause damage, thus the reserve fund should anticipate unexpected costs. Repair and replacement of bathhouse facilities, fencing, pool equipment and landscaping, lighting, etc., should be included in operating expenses and reserve funds.

Tennis Courts:

Outdoor tennis courts in the Washington, D.C., area are mostly constructed with either a hard all-weather surface or a soft, fast-dry granular surface. Regular maintenance and resurfacing will protect the basic structure and surface of either kind of court and reduce the need and frequency for major renovation.

Hard, All-weather Surface, and Soft Fast-Dry Surface Courts - A hard all-weather surface court normally has an asphalt base covered with an acrylic or other surfacing material and a color coating. Regular maintenance involves hosing and sweeping the court surface to keep it clean and edging the grass around the court. Prompt removal of leaves is important to avoid staining the court surface. Hard surface courts in the Northern Virginia climate often require resurfacing with two coats of surface material, a colored finish coat, and new line paint or tape every 5-6 years. There are many different types of resurfacing and coating products. Manufacturers market a series of compatible surfaces and coatings as surface "systems" which have varying life spans and different playing properties and qualities.

The cost of resurfacing a tennis court depends upon the type of surface system chosen and the condition of the base and the existing surface. Severely cracked and

raveled courts or courts that have "bird bath" depressions may need to be patched and/or overlaid with a 1-2" asphalt surface prior to applying a finish surface system. Maintenance requirements of specific surfaces can be obtained from the manufacturer or from a tennis court contractor. A soft fast-dry granular surface similar to a clay court is made from particles of igneous rock or fired brick with a chemical binder. This type of surface requires more maintenance than a hard surface court and must be watered daily (a sprinkler system is often installed), and frequent brushing and rolling of the surface is required.

Tennis court maintenance also includes repair and replacement of accessories, i.e., nets and cranks, posts, fences, signs, benches, lighting fixtures, etc. The cost depends upon the quality of the equipment, the amount of use the court receives, the incidence of vandalism, and severity of weather. A catalog of helpful publications and resource materials about tennis court maintenance is available from the United States Tennis Association (USTA) at (914) 696-7000 or at http://www.usta.com/index.html

Tennis Court Reserves: - Tennis court reserves are usually based upon the replacement cost of the court and a life expectancy of 25 years. The reserves may also include funds to cover the costs of periodic resurfacing, if not included in the annual maintenance budget. Either the reserve funds or the annual budget should also include the cost of replacing court accessories at their normal life expectancies.

Painting:

Associations are responsible to maintain their buildings' appearance and to protect exposed surfaces from the weather. The frequency with which painting is required depends upon the materials and the effects of sun and wind. Some parts or surfaces of a building such as doors, trim or siding facing the sun require more frequent care than others. It is less costly to refinish a surface before the existing finish has begun to chip, flake, or peel. Cracked, peeling or damaged finishes expose the underlying materials to deterioration and damage, and refinishing costs increase the more it is necessary to sand, wire brush, seal or otherwise prepare the surface for new paint. A contractor or a paint manufacturer's representative can assist with determining an association's painting needs, recommended schedule, and cost estimate. The contracting procedures outlined in Chapter 3 and the following should be carefully considered and followed:

- When evaluating a painting contractor, make sure he/the firm has the experience and any special equipment required for your structure;
- Insist upon a written warranty against defects in material and workmanship; one to two years warranty period is not unreasonable;
- Use high quality paint to last longer and not significantly increase the cost of the project, as labor is the most costly portion of painting expense;

- Ensure that the contract includes proper preparation of the surface to increase the life expectancy of the paint and to decrease the likelihood of a warranty claim.

Painting reserves should be based on a realistic estimate of the cost and should be updated regularly. Painting reserves are considered taxable income because painting is a non-deductible maintenance expense, not a capital expenditure. Associations should consult an attorney or tax accountant about this issue. An alternative is to paint and pay on an annual basis. If complete painting is necessary every five years, the annual operating budget for each year should include funds for painting one-fifth of the total surface area. This annual expense then may be deductible as an operating expense for maintenance, and no reserve fund (taxable or otherwise) is needed.

Accessibility for Disabled Persons – Americans with Disabilities Act (ADA), and the Fair Housing Act (FHA), as amended:

The Americans with Disabilities Act (ADA) of 1990 requires all places of public accommodation to provide safe, barrier-free access for persons with disabilities. Association pools and facilities may be considered as "public accommodations" under the ADA. Swimming pools, playgrounds, tennis courts, trails, paths and walkways must be made accessible wherever it is practical to do so. Facilities must comply with the ADA when used by individuals and groups other than members of the association that owns the facilities. Therefore, associations may be required, (or may freely choose), to make modifications to provide for disabled persons.

The Federal Fair Housing Act (FHA), as amended, provides accommodation for the handicapped or disabled persons in multi-family dwellings such as apartments and may be applicable to property owners' and condominium unit owners' associations. In almost every case, these requirements govern new construction and include areas, structures and facilities that are used only by members of the association, whether or not the facility is a public accommodation. A limited common element entranceway in a condominium development may have to be modified if a unit owner (or family member) is a disabled person. The property or unit owner pays for modifications required under FHA, whereas under ADA, they are paid for wholly by the association.

The Virginia Uniform Statewide Building Code (VUSBC) imposes the requirements of ADA and FHA on certain improvements, areas and facilities, particularly those available to or used by individuals outside of the association that owns the facility. These provisions apply whether or not any use charge or rent is collected. ADA applies to structures and buildings, such as offices, swimming pools, and community centers; and to areas of access to these facilities, e.g., parking areas, entrance ramps and doors, restrooms, walkways, and decks and patios around swimming pool areas. The VUSBC governs all new construction and alterations, and incorporates the ADA and the FHA implementation guidelines. In addition to complying with the requirements of the VUSBC, existing areas must be upgraded for accessibility as additions and interior alterations are constructed. The ADA specifies acceptable upgrade areas and items and may require an additional expenditure of up to 20% of the cost of the new alteration or addition for these upgrades. In general, any new structure, addition and alteration (including required upgrades to existing structures) must comply 100% with the ADA,

FHA and VUSBC guidelines and standards. For information on the VUSBC and new structures, additions and alterations contact the Fairfax County Office of Building Code Services, Building Plan Review Division at: http://www.fairfaxcounty.gov/dpwes/epr/index.htm or at (703) 324-1645. Questions concerning ADA application to non-structural site developments and issues may be directed to the DPWES Environment and Facilities Review Division at (703) 324-1720.

The Federal Department of Justice has issued guidelines for accessibility to many public accommodation facilities, and is expected to issue similar guidelines for public swimming pools. These guidelines may require modifications to existing pools and facilities as part of any significant renovation or repair as well as for new construction. Under these guidelines, building owners, including homeowner associations, must remove existing barriers to access, entry and use of facilities by individuals with disabilities. Removal is required to the extent that it is practical and feasible, and applies to all areas of public access/assembly, as determined by the Department of Justice. Qualified contractors must comply with ADA requirements and should know which ones apply to association pools and other facilities, and what products and designs meet ADA criteria. The cost of these one-time requirements depends upon the number of affected facilities and the complexity of construction. For most associations these unexpected costs are neither included in the annual operating budget nor the long-range capital reserves, and therefore, represent a significant financial burden that may necessitate passage of a special assessment (refer to the section on Special Assessments in Chapter 4 of this manual). Contact the Department of Justice at 1-800-514-0301 or at http://www.usdoj.gov/crt/ada/adahom1.htm.

Associations should be aware that the U.S. Department of Justice enforces and vigorously prosecutes violations of Title II of the ADA involving the provision of public services and barrier removal requirements. Failure to comply with requirements of the ADA and the FHA carries severe Federal penalties and could also expose an association to a liability suit and punitive damages if a disabled person is injured; or a civil rights suit even if no injury occurs. Prior to undertaking any compliance, rehabilitation, alteration, and/or capital improvement projects, associations are encouraged to seek information and clarification on ADA and FHA requirements in conjunction with their facilities and proposed project(s), and to seek advise and council from their attorney.